

ONCOLOGY

Guidelines for Sexual Health Care for Prostate Cancer Patients: Recommendations of an International Panel



Daniela Wittmann, PhD, MSW,¹ Akanksha Mehta, MD,² Eilis McCaughan, PhD, RN,³ Martha Faraday, PhD,⁴ Ashley Duby, MS,¹ Andrew Matthew, PhD,⁵ Luca Incrocci, MD,⁶ Arthur Burnett, MD,⁷ Christian J. Nelson, PhD,⁸ Stacy Elliott, MD,⁹ Bridget F. Koontz, MD,¹⁰ Sharon L. Bober, PhD,¹¹ Deborah McLeod, PhD,¹² Paolo Capogrosso, MD,¹³ Tet Yap, MD,¹⁴ Celestia Higano, MD,¹⁵ Stacy Loeb, MD,¹⁶ Emily Capellari, MLIS,¹⁷ Michael Glodé, MD,¹⁸ Heather Goltz, PhD, MSW,¹⁹ Doug Howell,²⁰ Michael Kirby, MD,²¹ Nelson Bennett, MD,²² Landon Trost, MD,^{23,24} Phillip Odiyo Ouma, MS,²⁵ Run Wang, MD,^{26,27} Carolyn Salter, MD,²⁸ Ted A. Skolarus, MD, MPH,^{1,29} John McPhail,³⁰ Susan McPhail,³⁰ Jan Brandon,³¹ Laurel L. Northouse, PhD, RN,³² Kellie Paich, MPH,³³ Craig E. Pollack, MD, MHS,³⁴ Jen Shifferd, MPT,³⁵ Kim Erickson, PT,³⁵ and John P. Mulhall, MD³⁶

ABSTRACT

Background: Patients with prostate cancer suffer significant sexual dysfunction after treatment which negatively affects them and their partners psychologically, and strain their relationships.

Received March 23, 2022. Accepted August 29, 2022.

¹Department of Urology, University of Michigan, Ann Arbor, MI, USA;

²Department of Urology, Emory University, Atlanta, GA, USA;

³In Memoriam, Ulster University School of Nursing, County Londonderry, Colrairie, UK;

⁴Oaks Consulting, Berryville, VA, USA;

⁵Adult Psychiatry and Health System, Princess Margaret Cancer Center, Toronto, ON, Canada;

⁶Department of Radiation Oncology, Erasmus MC Cancer Institute, Rotterdam, The Netherlands;

⁷Department of Urology, Johns Hopkins University, Baltimore, MD, USA;

⁸Department of Psychiatry and Behavioral Sciences, Memorial Sloan Kettering Cancer Center, New York, NY, USA;

⁹Departments of Psychiatry and Urologic Sciences, University of British Columbia, Vancouver, BC, Canada;

¹⁰Radiation Oncology, Genesis Care, NC, USA;

¹¹Department of Psychiatry, Dana Farber Cancer Institute and Harvard University, Boston, MA, USA;

¹²School of Nursing, NS Health Authority and Dalhousie University, Halifax, NS, Canada;

¹³Department of Urology, Ciriolo & Fondazione Macchi Hospital, University of Insubria, Varese, Lombardy, Italy;

¹⁴Department of Urology, Guys & St Thomas' Hospital, City of London, London, UK;

¹⁵Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada;

¹⁶Department of Urology at NYU Grossman School of Medicine, New York, NY, USA;

¹⁷Taubman Health Sciences Library, University of Michigan, Ann Arbor, MI, USA;

¹⁸Department of Medical Oncology, University of Colorado Cancer Center, Aurora, CO, USA;

¹⁹School of Social Work, University of Houston-Downtown, Houston, TX, USA;

²⁰Patient with Lived Experience, Keauu, HI, USA;

²¹Faculty of the Health and Human Sciences, University of Hertfordshire, Hatfield, Hertfordshire, UK;

²²Department of Urology, Northwestern University Feinberg School of Medicine, Chicago, IL, USA;

²³Department of Urology, Brigham Young University, Provo, UT, USA;

²⁴Department of Urology, Mayo Clinic, Rochester, MN, USA;

²⁵Faraja Cancer Support Trust, Nairobi, Central Province, Kenya;

²⁶Department of Surgery-Urology, University of Texas McGovern Medical School, Houston, TX, USA;

²⁷Department of Urology, MD Anderson Cancer Center, Houston, TX, USA;

²⁸Department of Urology, Madigan Army Medical Center, Tacoma, WA, USA;

²⁹VA Health Services Research & Development, VA Ann Arbor Healthcare System, Ann Arbor, MI, USA;

³⁰Patient and Partner with Lived Experience, Okemos, MI, USA;

³¹Partner with Lived Experience, Nashville, TN, USA;

³²School of Nursing, University of Michigan, Ann Arbor, MI, USA;

³³Clinical Quality and Survivorship, Movember Foundation, Culver City, CA, USA;

³⁴Department of Health Policy Management, Johns Hopkins University, Baltimore, MD, USA;

³⁵Department of Physical Therapy and Rehabilitation Medicine, Michigan Medicine Therapy Services, Ann Arbor, MI, USA;

³⁶Department of Sexual and Reproductive Medicine, Memorial Sloan Kettering Cancer Center, New York, NY, USA

Copyright © 2022, International Society of Sexual Medicine. Published by Elsevier Inc. All rights reserved.
<https://doi.org/10.1016/j.jsxm.2022.08.197>

Aim: We convened an international panel with the aim of developing guidelines that will inform clinicians, patients and partners about the impact of prostate cancer therapies (PCT) on patients' and partners' sexual health, their relationships, and about biopsychosocial rehabilitation in prostate cancer (PC) survivorship.

Methods: The guidelines panel included international expert researchers and clinicians, and a guideline methodologist. A systematic review of the literature, using the Ovid MEDLINE, Scopus, CINAHL, PsychINFO, LGBT Life, and Embase databases was conducted (1995–2022) according to the Cochrane Handbook for Systematic Reviews of Interventions. Study selection was based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Each statement was assigned an evidence strength (A–C) and a recommendation level (strong, moderate, conditional) based on benefit/risk assessment. Data synthesis included meta-analyses of studies deemed of sufficient quality (3), using A Measurement Tool to Assess Systematic Reviews (AMSTAR).

Outcomes: Guidelines for sexual health care for patients with prostate cancer were developed, based on available evidence and the expertise of the international panel.

Results: The guidelines account for patients' cultural, ethnic, and racial diversity. They attend to the unique needs of individuals with diverse sexual orientations and gender identities. The guidelines are based on literature review, a theoretical model of sexual recovery after PCT, and 6 principles that promote clinician-initiated discussion of realistic expectations of sexual outcomes and mitigation of sexual side-effects through biopsychosocial rehabilitation. Forty-seven statements address the psychosexual, relationship, and functional domains in addition to statements on lifestyle modification, assessment, provider education, and systemic challenges to providing sexual health care in PC survivorship.

Clinical Implications: The guidelines provide clinicians with a comprehensive approach to sexual health care for patients with prostate cancer.

Strengths & Limitations: The strength of the study is the comprehensive evaluation of existing evidence on sexual dysfunction and rehabilitation in prostate cancer that can, along with available expert knowledge, best undergird clinical practice. Limitation is the variation in the evidence supporting interventions and the lack of research on issues facing patients with prostate cancer in low and middle-income countries.

Conclusion: The guidelines document the distressing sexual sequelae of PCT, provide evidence-based recommendations for sexual rehabilitation and outline areas for future research. **Wittmann D, Mehta A, McCaughan E, et al. Guidelines for Sexual Health Care for Prostate Cancer Patients: Recommendations of an International Panel. J Sex Med 2022;19:1655–1669.**

Copyright © 2022, International Society of Sexual Medicine. Published by Elsevier Inc. All rights reserved.

Key Words: Prostate cancer; Sexual rehabilitation; Biopsychosocial; International

INTRODUCTION

Sexual dysfunction is the most commonly reported health-related quality of life outcome following therapies for prostate cancer, affecting men, partners, and their relationships. Sexual health care should therefore be central to prostate cancer survivorship care.

National origin, ethnicity, and race affect perspectives on gender roles, sexual orientation, relationships, health beliefs, disparities in access to healthcare, and uptake of healthcare offered. Help-seeking may be impeded by men's culture-driven discomfort about discussing sexual side-effects of treatment — a topic considered embarrassing and intensely private.¹

These guidelines were created, based on a biopsychosocial model of sexuality² (Figure 1) and 6 guiding principles: (1) The healthcare provider plays an active role in routinely addressing sexual concerns in prostate cancer survivorship. (2) Sexuality and sexual recovery are multi-dimensional. (3) As a part of a new sexual paradigm in survivorship, grief and mourning have been shown to play an important role in couples' recovery of sexual intimacy, despite sexual

dysfunction.³ (4) Men rarely return to baseline sexual function after prostate cancer therapy. (5) Including the partner in sexual health counseling, if both partners agree, is preferable when men are partnered. (6) Support by a multidisciplinary team of healthcare providers is needed to best support men and their partners who desire to recover sexual intimacy after prostate cancer therapy.

METHODS

The guidelines were developed by an international expert panel and a guideline methodologist (MF). A systematic literature review, designed to reflect the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)⁴ (Figure 2), using the Ovid MEDLINE, Scopus, CINAHL, PsychINFO, LGBT Life, and Embase databases (search dates January 1, 1995 through April 30, 2022) was conducted to identify peer-reviewed publications relevant to the impact of PCT, assessment of PCT consequences for sexuality, and treatments for sexual sequelae of PCT. The review

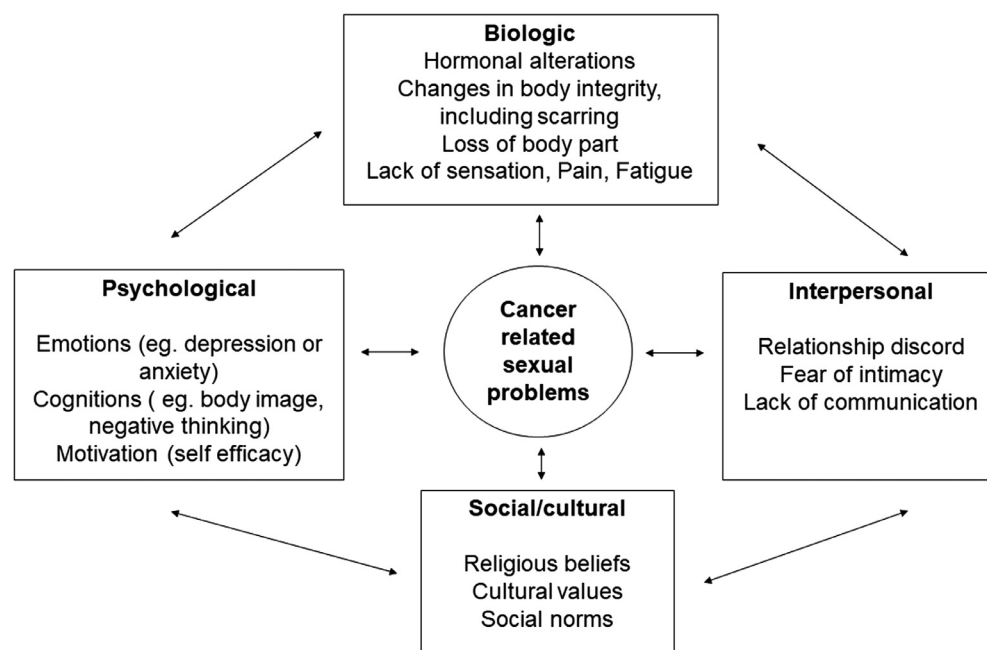


Figure 1. A biopsychosocial model of the impact of cancer on sexuality. Bober and Varella, *Journal of Clinical Oncology*, 2012, adapted, with permission.

yielded an evidence base of 610 articles after application of inclusion/exclusion criteria which were used to create the guidelines statements. Three articles met criteria for meta-analysis. If sufficient evidence existed, then the body of evidence for a statement was assigned a strength rating of A (high certainty), B (moderate certainty), or C (low certainty). Evidence-based statements of Strong, Moderate, or Conditional Recommendation were developed based on benefits and risks/burdens to men and their partners (Table 1).⁵ Additional information is provided as Clinical Principles and Expert Opinion when insufficient evidence existed. For detailed information on methodology, evidence evaluation procedures, the nomenclature system, and the body of evidence strength for each statement, please see the unabridged guideline at <http://movember.com/sexualhealthguideline>.

The Expert Panel

The initial leadership team, DW, EM, JM, discussed and agreed that there was not a comprehensive summary of research and clinical experience that would assist clinicians caring for men with prostate cancer in their approach to treating sexual dysfunction in prostate cancer survivorship. Since this is a worldwide problem and the extant research had been conducted in Japan, Australia, Europe, and North America, the team invited an international, multidisciplinary team of clinician scientists with deep knowledge of the topic of sexual dysfunction, faced by prostate cancer patients and their partners, to collaborate on developing guidelines for care that would address all aspects of sexuality — sexual function, the patient's and partner's psychological response to it, and its impact on their relationship. Clinicians with relevant experience from low and middle-income countries

were also invited, as were patients and partners whose insights were considered invaluable. The panel's goal is for the guidelines to provide clinicians, caring for prostate cancer patients, with a way to conceptualize the impact of prostate cancer therapies on all aspects of sexuality, and become aware of treatments available to help men and partners recover sexual intimacy after prostate cancer therapies.

Guidelines Statements

Counseling Patients and Partners about the Impact of PCT on the Biopsychosocial Aspects of Sexuality

1. A clinician-initiated discussion should be conducted with the patient and the partner (if partnered and culturally appropriate), about realistic expectations of the impact of PCT on the patient's sexual function, the partner's sexual experience, and the couples' sexual relationship. The clinician should promote openness and inclusivity, consider cultural context, and tailor counseling to the specific needs of patients who are heterosexual, gay, bisexual (GBM), identify as men who have sex with men (MSM), transgender women, and gender non-conforming individuals. (Strong Recommendation; Evidence Strength Grade C)
2. Patients and partners should be advised that biopsychosocial treatment for sexual problems can mitigate sexual dysfunctions and lead to the recovery of sexual intimacy. (Strong Recommendation; Evidence Strength Grade C)
3. Patients and partners should be advised that psychological distress, including grief and mourning about sexual losses, resulting from the sexual side-effects of PCT, can be experienced after PCT, and that distress can be mitigated with appropriate biopsychosocial rehabilitation strategies. (Moderate Recommendation; Evidence Strength Grade C)

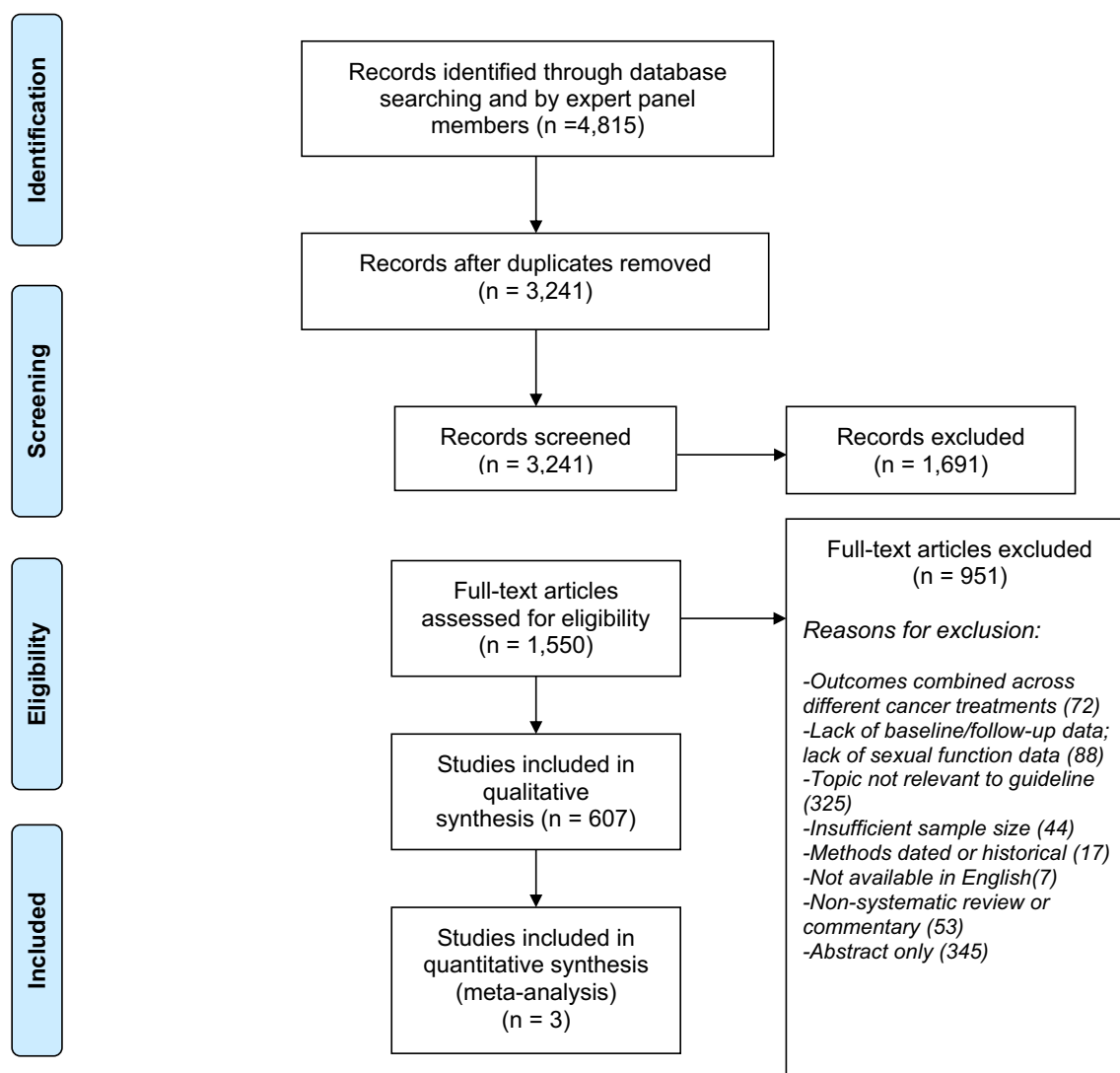


Figure 2. Preferred reporting items for systematic reviews and meta-analyses (PRISMA).

PCT-related sexual dysfunction is ubiquitous in survivorship.^{6–12} Approximately 81–93% of patients report that PCT negatively affects their sex lives, with 20–58% of men reporting cessation of sexual activity with their partner.¹³ Men's body image, sense of masculinity, overall health status, and relationships also are negatively affected.^{14–16,17,18,19,20} The impact of sexual dysfunction can be conceptualized in terms of patient, partner, and couple loss of spontaneous sexual activity, sexual identity, feelings of masculinity, and of relationship intimacy.^{21,22} It is critical to provide psychoeducation on strategies to successfully integrate loss via the process of grief and mourning. Realistic expectations for recovery are a cornerstone of patient and partner counseling.^{23,24,25} Including the partner is desirable: both members of the couple are affected by the patient's sexual dysfunction.^{19,26}

In the United States, an estimated 97,845–123,006 gay and bisexual prostate cancer survivors lack appropriate healthcare for treatment-related sexual dysfunctions.²⁷ A worldwide estimate is difficult, given that same-sex sexual behaviors are stigmatized

and criminalized in almost 80 countries across the globe, but an estimated 6–20% of men have sex with men in Asia, Latin America and Eastern Europe.^{28,29} Sexual recovery of transgender women and gender non-conforming patients with a prostate should be supported during survivorship. Stigma, discrimination, and lack of knowledge by healthcare providers can discourage these patients from seeking care.^{30,31}

Counseling Patients on the Impact of Individual Prostate Cancer Therapies on Sexual Function

4. Patients and partners should be counseled that all PCTs may result in the patient's short-term and long-term erectile dysfunction (ED). (Strong Recommendation; Evidence Strength Grade B)
5. Patients and partners should be counseled that patients treated with radical prostatectomy have different trajectories of sexual function decline and potential recovery compared to patients

Table 1. Nomenclature linking statement type to level of certainty, magnitude of benefit or risk/burden, and body of evidence strength

	Evidence strength A (High certainty)	Evidence strength B (Moderate certainty)	Evidence strength C (Low certainty)
Strong Recommendation (Net benefit or harm substantial)	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is substantial Applies to most patients in most circumstances and future research is unlikely to change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is substantial Applies to most patients in most circumstances but better evidence could change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) appears substantial Applies to most patients in most circumstances but better evidence is likely to change confidence (rarely used to support a Strong Recommendation)
Moderate Recommendation (Net benefit or harm moderate)	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is moderate Applies to most patients in most circumstances and future research is unlikely to change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is moderate Applies to most patients in most circumstances but better evidence could change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) appears moderate Applies to most patients in most circumstances but better evidence is likely to change confidence
Conditional Recommendation (No apparent net benefit or harm)	Benefits = Risks/Burdens Best action depends on individual patient circumstances Future research unlikely to change confidence	Benefits = Risks/Burdens Best action appears to depend on individual patient circumstances Better evidence could change confidence	Balance between Benefits & Risks/Burdens unclear Alternative strategies may be equally reasonable Better evidence likely to change confidence
Clinical Principle	A statement about a component of clinical care that is widely agreed upon by urologists or other clinicians for which there may or may not be evidence in the medical literature		
Expert Opinion	A statement, achieved by consensus of the Panel, that is based on members' clinical training, experience, knowledge, and judgment for which there is no evidence		

treated with radiotherapy. (Moderate Recommendation; Evidence Strength Grade C)

6. Patients and partners should be counseled that after PCT, most patients do not return to their pre-treatment erectile function levels. (Strong Recommendation; Evidence Strength Grade B)
7. Patients and partners should be advised that pre-existing ED is associated with a higher risk of post-treatment ED after radical prostatectomy, regardless of the surgical technique used, and after radiotherapy, regardless of the type of radiation employed. (Strong Recommendation; Evidence Strength Grade B)
8. Patients and partners should be informed there is no clear evidence supporting the advantage of either robotic, laparoscopic, or open radical prostatectomy in terms of post-operative erectile function outcomes. (Moderate Recommendation; Evidence Strength Grade C)
9. Patients and partners should be counseled that both prostatectomy and radiation therapy may be associated with orgasmic pain, decreased sexual desire, anodyspareunia during anal intercourse, and changes in ejaculatory function. Prostatectomy results in immediate and complete loss of ejaculate volume, while radiation therapy is associated with a more gradual decline and variable reduction in ejaculate volume. (Moderate Recommendation; Evidence Strength Grade C).
10. Patients and partners should be counseled that sexual arousal incontinence and climacturia may occur after radical prostatectomy with the potential to recover with recovery of

urinary control. (Strong Recommendation; Evidence Strength Grade C)

11. Patients and partners should be counseled that penile length and girth/volume loss may occur after radical prostatectomy. (Moderate Recommendation, Evidence Strength Grade C)
12. Patients and partners should be informed that radical prostatectomy may be associated with an increased risk of the development of penile curvature (Peyronie's disease; PD). (Conditional Recommendation, Evidence Strength Grade C)
13. Patients and partners should be counseled regarding the diverse impacts of androgen deprivation therapy (ADT) (as a primary or as an adjuvant ADT) on sexual desire, erectile function, penile girth and length, ejaculatory function, orgasmic function, and couples' intimacy. (Strong Recommendation; Evidence Strength Grade C)
14. Patients and partners should be counseled that patients treated with combined ADT and radiotherapy are at risk for the cumulative sexual side effects associated with both ADT and radiotherapy. (Strong Recommendation; Evidence Strength Grade C)
15. Prior to undergoing PCT, clinicians should routinely ask prostate cancer patients (regardless of age) and their partners if future fertility is desired. (Moderate Recommendation; Evidence Strength Grade C)
16. Patients interested in future fertility should be counseled that PCT may negatively affect their fertility potential. These patients could consider pre-treatment sperm banking and

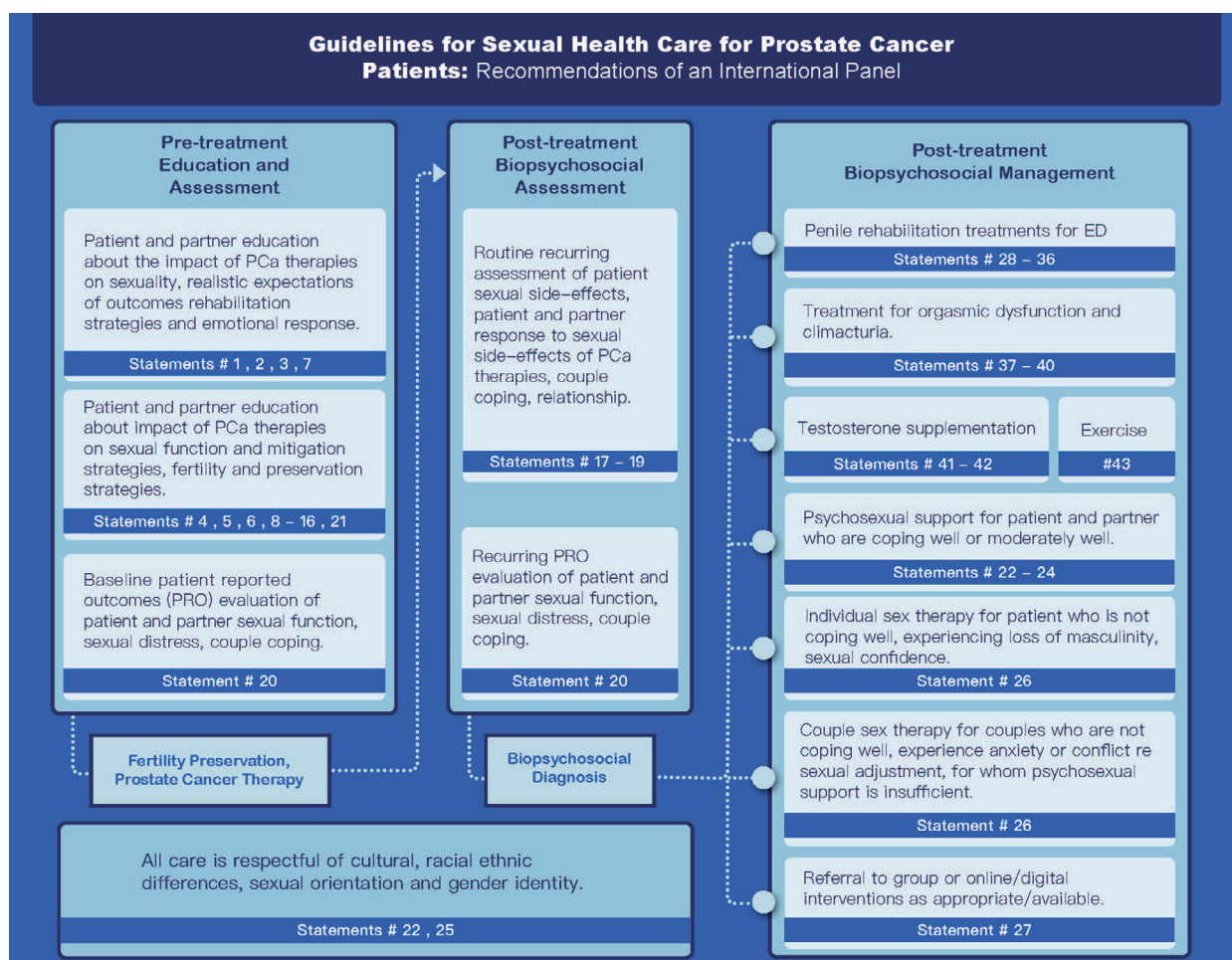


Figure 3. Guidelines for sexual health care for patients with prostate cancer.

referral to a reproductive specialist as availability of assisted reproductive techniques and financial and cultural considerations allow. (Moderate Recommendation; Evidence Strength Grade C)

Although patients may initially find it difficult to appreciate the way in which their sexuality will be affected, patients are more likely to develop realistic expectations and navigate the early recovery of sexual intimacy if they are prepared for the sexual side-effects of PCT.³²

All PCTs can result in ED. Most men do not return to their pre-treatment erectile function levels after PCT, although better sexual function before intervention correlates with better sexual function recovery. This relationship is present regardless of surgery or radiation type or technique, and is evident across different measures of sexual function. (For a detailed discussion and supporting literature, see the full guideline <http://movember.com/sexualhealthguideline>.)

Other sexual dysfunctions that may occur after PCT, especially radical prostatectomy, include orgasmic dysfunction, sexual incontinence, anodyspareunia in men who have receptive anal

sex, penile length and girth loss, and penile curvature.^{33,34} Although the prevalence of these dysfunctions varies widely, patients can experience significant bother, leading to avoidance of sexual relations and a decrease in quality of life.

Androgen deprivation therapy (ADT) has additional adverse impacts on sexual desire: many men significantly decrease sexual activity or stop altogether. Depression, anxiety, and emotional lability are commonly reported. Anatomic changes in response to ADT include loss of penile length and testicular size, gynecomastia, loss of body hair, and weight gain, which can substantially impact men's sexual body image and self-confidence.³⁵

Assessment of Sexual Dysfunction and Sexual Distress

17. Clinicians should offer screening and assessment prior to PCT and regularly throughout follow-up, tailored to cultural context, sexual orientation, and gender identity. (Clinical Principle)
18. In both pre and post PCT assessments, clinicians should pay attention to the presence of ED, low sexual satisfaction, low desire, orgasmic dysfunction [including altered orgasmic sensation, lack

of orgasm (anorgasmia), painful orgasm (dysorgasmia) and orgasm-associated urinary incontinence (climacturia)], sexual arousal incontinence, changes in penile shape, girth, length or size, anodyspareunia, curvature, couples' sexual concerns and avoidance or cessation of sexual activity, and couples' sexual concerns. (Moderate Recommendation; Evidence Strength C)

19. Patients and partners should be counseled that an assessment of the partner's sexual function can help plan treatment designed to support couples' recovery of sexual intimacy. (Clinical Principle)
20. Clinicians should use validated Patient Reported Outcome (PRO) measures whenever appropriate and whenever possible to assess patients' sexual function and possibly partners' sexual function, as well as sexual distress, based on a clinical assessment of the patients' and partners' goal for sexual recovery. (Clinical Principle)

Given the significant sexual difficulties throughout survivorship, a biopsychosocial sexual health assessment is critical. Oncology clinicians can screen for concerns; specialists trained in sexual health can provide a full biopsychosocial sexual health assessment. Validated measures that assess sexual function, relationship quality, couple coping, and sexual communication exist. However, a validated measure to assess sexual relationships is yet to be developed.^{36–38}

Assessment of the impact of PCT on sexuality should be grounded in culture-specific beliefs and values,^{39,40} as health literacy and spirituality also affect the understanding of and give meaning to PCT, sexual side-effects, and rehabilitation.^{41–44} The assessment of partners' sexual function can be valuable as post-menopausal female partners may experience vaginal dryness and low desire.⁴⁵

Available PRO measures were normed in high income countries and may not be responsive to cultural, ethnic or racial priorities. These measures include the International Index of Erectile Function (IIEF),^{46,47} the Erectile Function Domain (EFD) of the IIEF, the Sexual Health Inventory for Men (SHIM),⁴⁸ Patient-Reported Outcomes Measure Information System (PROMIS),⁴⁹ the Erectile Dysfunction Inventory for Treatment and Satisfaction (EDITS),⁵⁰ the Self-Esteem and Relationship (SEAR) Questionnaire,⁵¹ the Expanded Prostate Cancer Index Composite (EPIC),⁵² the Sexual Distress Scale in Men with Prostate Cancer (SDS),⁵³ Peyronie's Disease Questionnaire (PDQ)⁵⁴ and the Female Sexual Function Index (FSFI).⁵⁵ These measures are fully described in the unabridged guideline <http://movember.com/sexualhealthguideline>.

Lifestyle Modification

21. Lifestyle modification should be recommended to patients to optimize their overall health and sexual health, including avoiding smoking, engaging in physical activity, weight loss, increasing consumption of healthful plant-based foods, and reducing consumption of red and processed meat. (Clinical Principle)

Diets high in fruit, vegetables, whole grains, and fish are associated with a lower risk of ED; red and processed meat and refined

grains are associated with more ED.^{56–58} Physical activity is associated with a lower risk of ED; obesity, smoking, and alcohol consumption have been associated with a higher prevalence of ED.⁵⁹

Psychosocial Treatment

22. Clinicians should provide education, individualized sexual rehabilitation, and psychosexual support to patients and partners across the entire survivorship continuum, tailored to: PCT type, partnership status, cultural, ethnic, and racial context, sexual orientation, and gender identity. (Strong Recommendation; Evidence Strength Grade C)
23. Clinicians should normalize grief as a typical reaction to sexual losses and encourage patients and partners to whom sexual recovery is important to pursue sexual intimacy despite sexual losses. (Strong Recommendation; Evidence Strength Grade C)
24. Clinicians should include the partner, if both the patient and partner agree, and provide support for couples coping with the sexual side-effects of PCT both directly and through referral for psychosexual treatment. (Strong Recommendation, Evidence Strength Grade C)
25. Clinicians should support GBM, MSM, transgender women, and gender non-conforming patients and their partners with information relevant to their sexual experience, and guide them towards meaningful support resources. (Expert Opinion)
26. Clinicians should refer patients, partners, and couples for whom education and support are insufficient for specialty psychosexual treatment. (Clinical Principle)
27. Clinicians should make patients and partners aware of group interventions and digital health/telemedicine methodologies that can increase access to sexual health support in prostate cancer survivorship. (Moderate Recommendation, Evidence Strength Grade C)

Pre-treatment education about PCT-related sexual dysfunction and sexual recovery, addressed through education in a biopsychosocial framework, can lead to better adjustment outcomes.^{32,60} Describing grief and mourning as a normal reaction to sexual losses and important aspects of coping can help patients and partner begin to re-establish sexual activity after prostate cancer treatment.^{61–63}

Counseling for the use of erectile aids is supported by the most robust evidence. Couples also benefit when they are encouraged to communicate, expand sexual repertoire to non-penetrative sexual activities, and support each other during the recovery process.

Currently no evidence-based psychosocial interventions are designed for GBM and MSM although some interventions have relevant content.^{62,64} These patients' unique needs must be considered when planning treatment. The prostate has sexual sensitivity; its surgical removal represents a loss of a sexual organ.⁶⁵ Radiation leads to loss of prostate sensitivity and its role in orgasm.⁶⁶ Other losses may include an erection firm enough for anal penetration, timing of resumption of anal penetration, the loss or diminution of ejaculate as an aspect of erotic play, and the resumption of sexual activity when the usual sexual roles ("top"

or “bottom”) are no longer available.^{65,67} Tailored pre-treatment and post PCT counseling is needed in survivorship.

Insufficient information is available to make specific recommendations that respond to cultural, ethnic, and racial differences. Groups from different cultures vary in perceptions of sexual dysfunction-related bother, impact on mental health, and interpersonal relationships after PCT.^{68–70}

Supporting men who are single or widowed who wish to have a relationship is equally important so that they can work towards the goal of having a successful sexually intimate relationship while using erectile aids.

It is uncertain what kind of sexual distress transgender women and gender non-conforming patients experience after PCT. Support for sexual recovery can be planned, based on the acknowledgement of their unique sexual concerns related to identity, history of hormonal and surgical treatment, and sexual goals in survivorship.⁷¹

Support groups can provide an outlet for sharing experiences about sexual recovery. Sexual orientation, gender identity, culture, race and ethnicity may dictate the kind of group support that will be acceptable.⁷² Although rarely utilized by heterosexual couples, men in same sex relationships sometimes open up their relationship to other lovers to maximize eroticism and sexual satisfaction.^{73,74} GBM, MSM, and transgender women may rely on non-traditional supports, having experienced rejection from families.⁷⁵ Patients and partners with pre-existing sexual or relationship problems, and those not coping well with the sexual changes after PCT, should be offered sex therapy referral. Online support resources, such as malecare.org, can be a particularly valuable asset in countries with few clinical resources.⁷⁶

Clinical environments will make patients feel included and respected if they are decorated with images reflective of the diversity of cultures, ethnicities, races, sexual orientations, and gender identities. Handouts can be similarly composed. Intake forms that give an opportunity to specify one's gender, sexual orientation, culture, ethnicity, and racial identity can assure the patient of the likelihood that his individuality will be respected.

Treatment of Sexual Dysfunctions

28. Clinicians should consider nerve-sparing surgical treatment options, when available and oncologically safe, irrespective of baseline ED. (Moderate Recommendation; Evidence Strength Grade C)
29. Clinicians should define the intent and goals of penile rehabilitation strategies on an individualized basis, including preservation of penile length, maintenance of corporal tissue quality, and early patient engagement in sexual recovery. Penile rehabilitation should not be equated with treatment for the recovery of unassisted erectile function. (Clinical Principle)
30. Clinicians should counsel patients that use of phosphodiesterase type 5 inhibitors (PDE5i) for penile rehabilitation in the early post-prostatectomy period (up to 45 days post-surgery) does not improve rates of unassisted and PDE5i-assisted

erectile function recovery at 12 months compared to placebo. (Strong Recommendation; Evidence Strength Grade C)

31. Clinicians should advise patients there is limited evidence to determine the benefit of non-PDE5i approaches for penile rehabilitation in order to promote recovery of erectile function. (Moderate Recommendation, Evidence Strength Grade C)
32. Patients and partners should be counseled that there is insufficient evidence to definitively support penile rehabilitation with PDE5 inhibitors for the prevention of penile volume loss. (Conditional Recommendation, Evidence Strength Grade C)
33. Clinicians should counsel patients that there is insufficient evidence to fully determine the benefit of PDE5i use after radiation therapy as a strategy for penile rehabilitation. (Conditional Recommendation, Evidence Strength C)
34. Clinicians should support patients' use of pro-erectile aids, as well as non-penetrative sexual activity, if they wish to continue to engage in sexual activity. (Strong Recommendation; Evidence Strength Grade C)
35. Clinicians should discuss all available erectile function treatment options with patients following all PCT modalities, including PDE5i, intraurethral suppositories, intracavernosal injections (ICI), vacuum erection devices (VED), penile traction therapy, and penile implants. Clinicians should tailor recommendations based on patient preference, efficacy, and phase of erectile function recovery. This discussion should address benefits, risks, and contraindications associated with each option, as well as patient and partner goals. (Clinical Principle)
36. Clinicians should inform patients with persistent ED after completion of PCT about the potential benefits and risks of penile implant surgery. (Moderate Recommendation; Evidence Strength Grade C)
37. If identified, altered orgasmic sensation, difficulty reaching orgasm, or anorgasmia can be managed using a biopsychosocial approach. (Expert Opinion)
38. Persistent, bothersome dysorgasmia may be treated using alpha-adrenergic blockers. (Moderate Recommendation, Evidence Strength Grade C)
39. Patients and partners should be counseled regarding management strategies for bothersome sexual incontinence (including sexual arousal incontinence and climacturia), including psychological reframing. (Clinical Principle)
40. Patients should be counseled that there are insufficient data regarding the efficacy of pelvic-floor rehabilitation, penile tension loop, a male sling operation, or placement of an artificial urinary sphincter for the management of sexual incontinence (including sexual arousal incontinence and climacturia). (Conditional Recommendation, Evidence Strength C)
41. Clinicians may discuss the risk and benefits of testosterone therapy to improve low sexual desire in hypogonadal men following PCT. (Moderate Recommendation, Evidence Strength Grade C)
42. Clinicians should counsel patients that there are inadequate data to quantify the risks vs benefits regarding testosterone therapy to treat low sexual desire in men with treated, or active, non-metastatic prostate cancer. (Conditional Recommendation, Evidence Strength C)

Erectile dysfunction is the most pervasive and widely-studied effect of PCT. Studies that compared erectile function recovery among men who had nerve-sparing vs non-nerve sparing

procedures generally reported higher erectile function recovery rates with nerve-sparing techniques⁷⁷; however, when data are aggregated across studies, pre-PCT erectile function, rather than surgical technique, is a stronger predictor of post-PCT erectile function. For citations, see the unabridged guideline <http://true-north.movember.com/SexualHealthGuideline>. It is reasonable to consider that the same functional anatomic approach can also be applied to radiation treatment. Vessel-sparing radiation has been described as 1 technique designed to preserve sexual function while maintaining high levels of cure.⁷⁸

Penile rehabilitation following prostate cancer is intended to minimize the negative impact of PCT on sexual function and to engage patients in sexual recovery. It may include a combination of pharmacological and non-pharmacological strategies aimed at preserving penile length, erectile function and the quality of the corpora cavernosa; PDE5i's are most commonly employed, but have not been proven to restore erectile function.^{79,80} Similarly, data from vacuum erection devices only report outcomes while the device is in use and do not include results after a washout period.⁸¹ Preliminary data from a single RCT evaluating second generation penile traction therapy suggest possible benefits in preserving erectile function and penile length when used in the early post-operative period following prostatectomy. However, external validation is warranted.⁸² It is also notable that penile rehabilitation is not synonymous with, and does not ensure, restoration of cavernous nerve activity.

Strategies for treatment of ED include PDE5i's, ICI, intraurethral suppository, vacuum erection devices, and penile implants. Approach to treatment should be tailored. Patients should be thoroughly counseled about the efficacy, risks, and expected outcomes with the use of any of these approaches in the context of their individual needs and expectations. Consultation with a sexual medicine or sexual health expert can also address other sexual dysfunctions such as orgasmic dysfunction, sexual incontinence, and low libido.

Orgasm is the brain's perception and interpretation of the various striated and smooth muscle (accessory glands) contractions and sensory neuronal stimulation in the pelvic region and other erogenous zones. Prostate cancer treatments can remove or radiate the prostate and surrounding bladder neck, seminal vesicles, and vas deferens which may result in altered orgasmic sensation or orgasmic threshold.^{83,84} Psychological and physiological variants such as depression, altered erectile function, and reduced testosterone with ADT can further reduce the chance of reaching and enjoying orgasm or may even cause dysorgasmia. Pelvic floor therapy has been described as helpful for chronic pelvic pain (CPP) management and for post radical prostatectomy incontinence training.^{85,86} Treatments for dysorgasmia may include pelvic floor therapy for general pelvic floor hypertonus but no direct literature exists.

There is a limited number of studies examining the efficacy of surgical intervention for climacturia. In a series of 46 men with climacturia and stress urinary incontinence following radical

prostatectomy 100% had resolution of their climacturia after transobdurator sling placement, while 84% had resolution of stress urinary incontinence.^{87,88} Improvement in climacturia and SUI have also been described in small series of men undergoing mini-Jupette graft after radical prostatectomy, with >90% of patients noting significant or complete resolution of climacturia.^{89,90}

The specific role for testosterone therapy in men with treated, active, and metastatic prostate cancer is unclear. Several small series have been reported of men with treated or non-metastatic prostate cancer who received testosterone for symptomatic hypogonadism and have shown minimal or no increased risk for prostate cancer progression in these settings.^{91–94} However, all studies evaluating the safety of testosterone in these settings have been non-randomized and include small cohorts with relatively short follow-up.

Lifestyle Modification Strategies

43. Clinicians should inform patients and partners about the importance and benefits of exercise for sexual health and as a component of medical management related to ADT. (Moderate Recommendation; Evidence Strength Grade C)

Randomized clinical trials have shown the benefit of exercise on many aspects of wellbeing that support sexual health, such as body composition, fatigue/energy level, quality of life, physical function, social functioning, psychological distress, urinary problems, cognitive decline.⁹⁵

A Summary of Guidelines Statement

Figure 3 is an at-a-glance summary of the guidelines. Guidelines statements are organized to suggest a pathway for a systematic approach to providing sexual health care to patients with prostate cancer and their partners.

Clinician Education and Training

44. Clinicians should undergo sexual health education in interprofessional groups using case-based/reflective learning approaches, adopting a biopsychosocial lens, and incorporating attention to ethnic and racial diversity and to sexual minorities. (Strong Recommendation; Evidence Strength Grade C)

The most common barriers identified by clinicians to discussing sexuality are “lack of training” (38%) and “difficult issue to discuss” (27%).⁹⁶ Studies have documented gaps in provider education either in general sexual health care or in prostate cancer.^{97–99} The Sexual Health & Rehabilitation e-Training program (SHARE-T) focuses on teaching participants how to do a sexual health assessment and treatment. It has produced good outcomes specific to sexual health training in prostate cancer using a web-based design.¹⁰⁰ The American Society for Clinical Oncology (ASCO) recently published a position paper that calls

for more competency-based training for providing care to sexual and gender minorities.¹⁰¹ Competency in assessing sexual problems after PCTs should be a requirement of professional organizations administering accreditation for clinicians caring for patients with prostate cancer.

Healthcare Programs and Systems

45. **Providers and healthcare systems should develop culturally appropriate materials for counseling patients and their partners regarding the impact of PCT on sexual health. (Moderate Recommendation; Evidence Strength Grade C)**
46. **Patient education programs about sexual recovery after PCT should be tailored to reflect local cultural influences, based on resources available in that region, conceptualization of sexual recovery, and of the priorities in that region. (Expert Opinion)**
47. **All insurance providers should cover the treatment of sexual dysfunctions secondary to PCT in order to validate this clinically important aspect of prostate cancer care and to reduce disparities in access to care. (Clinical Principle)**

Prostate cancer is prevalent among people in every corner of the world. The definition of sexuality varies with cultural, ethnic, and racial conceptualizations. To adequately define the needs of the population being cared for, providers must have cultural, racial, and ethnic awareness and clinician training.^{102,103} Cultural sensitivity is often lacking in prostate cancer educational materials.¹⁰⁴ Patients and partners should be consulted when developing educational materials.

Most countries lack insurance coverage for erectile aids for the management of PCT-related ED or for psychosexual counseling.^{105,106} Out of pocket cost for PDE-5 inhibitors can vary between pharmacies by as much as 38000%.¹⁰⁷ High cost and lack of coverage for medications, devices, and psychosexual counseling creates disparity, compromising patients' ability to recover post-PCT sexual intimacy.

Future Directions

There is a growing body of evidence to validate that the concept that sexual health support is critical to the wellbeing of patients with prostate cancer and their partners, however most research has been conducted in Europe and in English-speaking countries where research resources are more available and attitudes towards prostate cancer and sexuality are relatively similar. Funding sources should be identified to promote research in low and middle-income countries on cultural, ethnic and racial groups' attitudes towards sexuality, sexual practices and preferences for support. Similarly, funding sources should be identified to promote research on sexual and gender minorities, such as men who have sex with men, trans women and gender non-conforming patients.

The most significant gap in the treatment of physiologic sexual dysfunction is the lack of evidence demonstrating convincingly that penile rehabilitation protocols improve the recovery of

erectile function. Animal models have not translated well into human recovery. At this time, the value of penile rehabilitation is largely psychological because it engages men and their partners in sexual recovery early. More research is needed to advance this area of survivorship care.

Treatment for erectile dysfunction following prostate cancer treatment is supported by well-established evidence. The major gap in care is the uncertainty about the acceptability of erectile dysfunction treatments in cultural and ethnic groups, given the stigma associated with sexual dysfunction. Locally based research can answer questions about the acceptability of sexual aids.

Psychosocial support for the use of pro-erectile treatments is now evidence-based but is not implemented in the majority of prostate cancer treatment settings. Attentiveness to partners' needs and interventions for couples are just emerging. Interventions tailored to sexual orientation and gender identity remain undeveloped. More research into the needs and preferences of these populations is needed so that relevant interventions can be developed and tested.

Lack of clinician competence to provide sexual health care is an ongoing barrier. Education to address patients' and partners' sexual health concerns and rehabilitation must become an integrated part of multidisciplinary professional training for clinicians who care for prostate cancer patients.

Addressing perceived cost will be key moving forward, as healthcare institutions claim cost is the primary barrier to patients' obtaining sexual aids and to embedding a fully trained specialist in psychosexual care in oncology treatment programs. Moreover, culturally appropriate methods for providing integrated sexual health care should be investigated.

Finally: advocacy directed at providers, institutions, and governments is needed to secure funding for research to answer questions about the psychosexual needs and resources relevant to patients and partners in low and middle-income countries. Evidence-based clinical care in prostate cancer survivorship can only grow if it becomes a societal priority. Given the considerable prevalence of prostate cancer globally, support of men and partners' efforts to recover sexual intimacy after prostate cancer treatment represents a metric of quality of prostate cancer care.

Corresponding Author: Daniela Wittmann, PhD, LMSW, Department of Urology, University of Michigan, 2800 Plymouth Road, Building 16, Ann Arbor, MI 48109, Tel: 734-615-2878; Fax: 734-232-2400; E-mail: dwittman@med.umich.edu

Conflict of Interest: Daniela Wittmann is routinely supported by the Department of Urology of the University of Michigan to attend annual meetings of the American Urological Association and the Sexual Medicine Society of North America, is a past Member of the Board of Directors of the Sexual Medicine Society of North America, and is an associate editor of the *Journal of Sexual Medicine*.

Sharon L. Bober reports receiving honoraria from UpToDate and Johns Hopkins University and being chair for the Scientific Network on Female Sexual Health and Cancer.

Stacy Loeb is supported by Department of Defense Idea Development Award W81XWH2010380.

Ted A. Skolarus reports UpToDate royalties for authorship on a prostate cancer survivorship topic; he also reports grants from the National Cancer Institute (R37CA222885 and R01CA242559).

Bridget F. Koontz is a consultant for Rythera Therapeutics; reports research funding from Janssen Scientific Affairs, Merck Pharmaceuticals, and Blue Earth Diagnostics; receives royalties from Demos Publishing; is a symposium steering committee member for the American Society of Clinical Oncology; is a committee member for the American Association of Physicists in Medicine, the National Cancer Institute, and NRG; and is on advisory boards for Bayer, Blue Earth Diagnostics, and Myovant. L.

Michael Glodé reports grants or contracts from the National Institutes of Health and the State of Colorado; consultancy for Janssen, Exelixis, Bayer, and Seattle Genetics; participation on boards for Janssen and Exelixis; multiple patents (none related to the topic of this article); committee membership for Movember; and stock or stock options in Aurora Oncology.

John P. Mulhall is an Editor in Chief of the Journal of Sexual Medicine; advisor to Vault Health and reports stock or stock options in Vault Health, has received payment for expert testimony, and has received support for attending meetings and/or travel from Memorial Sloan Kettering.

Laurel L. Northouse reports personal stock in Microsoft and Stryker and consulting fees for the Dyadic Interventions for people with Advanced cancer and their Informal Caregivers study.

Kellie Paich is an employee of Movember.

Christian J. Nelson reports a grant from the National Institutes of Health (R01 CA190636).

Craig E. Pollack reports stock ownership in Gilead Pharmaceuticals and is working on a temporary assignment at the Department of Housing and Urban Development (HUD); this report does not represent the views of HUD.

Nelson Bennett is a speaker for Endo Pharmaceutical Company and Coloplast, he has a training grant from Coloplast.

Michael Kirby is a speaker for the following pharmaceutical companies — Lilly, Astra Zeneca, Glaxo-Smith-Kline.

Run Wang is a speaker for Boston Scientific, Teleflex and Coloplast.

Arthur Burnett receives research grant support from: Endo Pharmaceutical, Boston Scientific, and the National Institutes of Health. He is a consultant and advisor to Boston Scientific, Coloplast, Reflexonic, Astellas, Novartis, Futura Medical, Comphya SA, and Myriad Genetics; he is a patent holder for MHN Biotech; he is a member of the following Boards: Urology Care Foundation, The American Urological Association PAC, and Mentoring Mae teens in the Hood. He is a member of the editorial boards of Urology Practice, Andrology, Canadian Journal of Urology, International Urology and Nephrology, Urology Time; he is on the board of UroMissionsWorks Inc (Non-profit).

Ashley Duby is the owner of Midwest Premier Business Solutions, LLC and is contracted with Movember to provide assistance with project management.

The other authors made no disclosures.

Funding: This work was supported and funded by Movember.

STATEMENT OF AUTHORSHIP

Conceptualization, D.W., A.M., E.M., A.G.M., L.I., A.B., C.N., S.E., B.K., S.B., D.M., P.C., C.H., S.L., M.G., H.G., D.H., M.K., N.B., L.T., P.O., R.W., C.S. and J.M.; Methodology, D.W., E.M., A.M., M.F., A.B. and J.M.; Validation, D.W., A.M. and M.F.; Formal Analysis, M.F.; Investigation, D.W., A.M. and E.C.; Resources, D.W.; Data curation, D.W., M.F., A.D. and E.C.; Writing original draft, D.W., A.M., M.F., A.G.M., L.I., A.B., C.N., S.E., B.K., S.B., D.M., P.C., T.Y., C.H., S.L., H.G., M.K., N.B., L.T., P.O., R.W., C.S. and J.M.; Writing-Review and Editing, D.W., A.M., M.F., A.G.M., L.I., A.B., C.N., S.E., B.K., S.B., D.M., P.C., T.Y., C.H., S.L., M.G., H.G., D.H., M.K., N.B., L.T., P.O., R.W., C.S., T.S., J.M.C.P., S.M.C.P., J.B., L.N., K.P., C.P., J.F., K.E. and J.P.; Visualization, D.W., A.M. and M.F.; Supervision, D.W., A.M., M.F. and J.M.; Project Administration, D.W. and A.D.; Funding Acquisition, D.W.

REFERENCES

1. King-Okoye M, Arber A, Faithfull S. Routes to diagnosis for men with prostate cancer: Men's cultural beliefs about how changes to their bodies and symptoms influence help-seeking actions. A narrative review of the literature. *Eur J Oncol Nurs* 2017;30:48–58.
2. Bober SL, Varela VS. Sexuality in adult cancer survivors: challenges and intervention. *J Clin Oncol* 2012;30:3712–3719.
3. Wittmann D, Carolan M, Given B, et al. What couples say about their recovery of sexual intimacy after prostatectomy: Toward the development of a conceptual model of couples' sexual recovery after surgery for prostate cancer. *J Sex Med* 2015;12:494–504.
4. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *J Clin Epidemiol* 2009;62:1006–1012.
5. Burnett AL, Nehra A, Breau RH, et al. Erectile dysfunction: AUA guideline. *J Urol* 2018;200:633–641.
6. Marschke PLS, Schultz PL. Patient and spouse health related quality of life after radical retropubic prostatectomy. Baltimore, MD: University of Maryland at Baltimore; 2000. p. 200.
7. Harrington C B, Hansen JA, Moskowitz M, et al. It's not over when it's over: long-term symptoms in cancer survivors—a systematic review. *Int J Psychiatry Med* 2010;40:163–181.
8. Chisholm KE, McCabe MP, Wootten AC, et al. Review: Psychosocial interventions addressing sexual or relationship

- functioning in men with prostate cancer. *J Sex Med* 2012;9:1246–1260.
9. Matthew AG, Alibhai SM, Davidson T, et al. Health-related quality of life following radical prostatectomy: Long-term outcomes. *Quality Life Res* 2014;23:2309–2317.
 10. Hart TL, Coon DW, Kowalkowski MA, et al. Changes in sexual roles and quality of life for gay men after prostate cancer: challenges for sexual health providers. *J Sex Med* 2014;11:2308–2317.
 11. Ussher JM, Perz J, Kellett A, et al. Health-Related quality of life, psychological distress, and sexual changes following prostate cancer: A comparison of gay and bisexual men with heterosexual men. *J Sex Med* 2016;13:425–434.
 12. Rosser BRS, Kohli N, Polter EJ, et al. The sexual functioning of gay and bisexual men following prostate cancer treatment: Results from the restore study. *Arch Sex Behav* 2020;49:1589–1600.
 13. Lehto US, Tenhola H, Taari K, et al. Patients' perceptions of the negative effects following different prostate cancer treatments and the impact on psychological well-being: A nationwide survey. *Br J Cancer* 2017;116:864–873.
 14. Harrington JM, Jones EG, Badger T. Body image perceptions in men with prostate cancer. *Oncol Nurs Forum* 2009;36:167–172.
 15. Harrington JM. Implications of treatment on body image and quality of life. *Semin Oncol Nurs* 2011;27:290–299.
 16. Tsang V, Skead C, Wassersug RJ, et al. Impact of prostate cancer treatments on men's understanding of their masculinity. *Psychol Men Masculinit* 2019;20:214–225.
 17. Ussher JM, Perz J, Kellett A, et al. Health-Related quality of life, psychological distress, and sexual changes following prostate cancer: A comparison of gay and bisexual men with heterosexual men. *J Sex Med* 2016;13:425–434.
 18. Watson E, Shinkins B, Frith E, et al. Symptoms, unmet needs, psychological well-being and health status in survivors of prostate cancer: Implications for redesigning follow-up. *BJU Int* 2016;117:E10–E19.
 19. Movsas TZ, Yechieli R, Movsas B, et al. Partner's perspective on long-term sexual dysfunction after prostate cancer treatment. *Am J Clin Oncol Cancer Clin Trials* 2016;39:276–279.
 20. Collaço N, Rivas C, Matheson L, et al. Prostate cancer and the impact on couples: A qualitative metasynthesis. *Psychooncology* 2017;26:21–22.
 21. O'Shaughnessy P, Laws TA, Esterman AJ. The prostate cancer journey: Results of an online survey of men and their partners. *Cancer Nurs* 2015;38:E1–E12.
 22. Tucker SR, Speer SA, Peters S. Development of an explanatory model of sexual intimacy following treatment for localised prostate cancer: A systematic review and meta-synthesis of qualitative evidence. *Soc Sci Med* 2016;163:80–88.
 23. Wittmann D, He C, Coelho M, et al. Patient preoperative expectations of urinary, bowel, hormonal and sexual functioning do not match actual outcomes 1 year after radical prostatectomy. *J Urol* 2011;186:494–499.
 24. Davison BJ, Elliott S, Ekland M, et al. Development and evaluation of a prostate sexual rehabilitation clinic: A pilot project. *BJU Int* 2005;96:1360–1364.
 25. Zhou ES, Bober SL, Nekhlyudov L, et al. Physical and emotional health information needs and preferences of long-term prostate cancer survivors. *Patient Educ Counsel* 2016;99:2049–2054.
 26. Forbat L, White I, Marshall-Lucette S, et al. Discussing the sexual consequences of treatment in radiotherapy and urology consultations with couples affected by prostate cancer. *BJU Int* 2012;109:98–103.
 27. Simon Rosser BR, Hunt SL, Capistrant BD, et al. Prostate cancer in gay, bisexual, and other men who have sex with men: A review. *LGBT Health* 2016;3:32–41.
 28. UNAIDS. The GAP report: Gay men and other men who have sex with men. 2014, Geneva, Switzerland.
 29. Caceres C, Konda K, Pecheny M, et al. Estimating the number of men who have sex with men in low and middle income countries. *Sex Transm Infect* 2006;82(Suppl 3):iii3–iii9.
 30. Gomes R, Murta D, Facchini R, et al. Gender and sexual rights: Their implications on health and healthcare. *Ciencia e Saude Coletiva* 2018;23:1997–2005.
 31. Holmberg M, Arver S, Dhejne C. Supporting sexuality and improving sexual function in transgender persons. *Nature Rev Urol* 2019;16:121–139.
 32. Paich K, Dunn RL, Skolarus TA, et al. Preparing patients and partners for recovery from the side effects of prostate cancer surgery: A group approach. *Urology* 2016;88:36–42.
 33. Frey A, Pedersen C, Lindberg H, et al. Prevalence and predicting factors for commonly neglected sexual side effects to radical prostatectomies: Results from a cross-sectional questionnaire-based study. *J Sex Med* 2014;11:2318–2326.
 34. Wheldon CW, Polter EJ, Rosser BRS, et al. Pain and loss of pleasure in receptive anal sex for gay and bisexual men following prostate cancer treatment: Results from the Restore-1 Study. *J Sex Res* 2021;59:826–833.
 35. Potosky AL, Knopf K, Clegg LX, et al. Quality-of-life outcomes after primary androgen deprivation therapy: results from the prostate cancer outcomes study. *J Clin Oncol* 2001;19:3750–3757.
 36. Sharpley CF, Cross DG. A psychometric evaluation of spanier dyadic adjustment scale. *J Marriage Family* 1982;44:739–747.
 37. Levesque C, Lafontaine MF, Caronj A, et al. Validation of the English Version of the Dyadic Coping Inventory. *Measurement and Evaluation in Counseling and Development* 2014;47(3):215–225.
 38. Catania JA. Dyadic sexual communication scale. In: Milhausen RR, Sakaluk JK, Fisher TD, editors. Handbook of sexuality-related measures. 4th London, UK: Taylor & Francis; 2020.

39. Allen JD, Kennedy M, Wilson-Glover A, et al. African-American men's perceptions about prostate cancer: Implications for designing educational interventions. *Soc Sci Med* 2007;64:2189–2200.
40. Sanchez MA, Bowen DJ, Hart A, et al. Factors influencing prostate cancer screening decisions among African American men. *Ethn Dis* 2007;17:374–380.
41. Kilbridge KL, Fraser G, Krahn M, et al. Lack of comprehension of common prostate cancer terms in an underserved population. *J Clin Oncol* 2009;27:2015–2021.
42. Wang DS, Jani AB, Tai CG, et al. Severe lack of comprehension of common prostate health terms among low-income inner-city men. *Cancer* 2013;119:3204–3211.
43. Kaplan AL, Crespi CM, Saucedo JM, et al. Decisional conflict in economically disadvantaged men with newly diagnosed prostate cancer: Baseline results from a shared decision-making trial. *Cancer* 2014;120(17):2721–2727.
44. Krupski TL, Sonn G, Kwan L, et al. Ethnic variation in health-related quality of life among low-income men with prostate cancer. *Ethn Dis* 2005;15:461–468.
45. Schover LR, Canada AL, Yuan Y, et al. A randomized trial of internet-based vs traditional sexual counseling for couples after localized prostate cancer treatment. *Cancer* 2012;118:500–509.
46. Rosen RC, Riley A, Wagner G, et al. The international index of erectile function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology* 1997;49:822–830.
47. Kiss MJ, McDonagh LK, Sparks B, et al. Accurately assessing gay men's erectile functioning: a critique of the International Index of Erectile Function (IIEF) Use with Gay Men. *J Sex Res* 2021;58:589–598.
48. Rosen RC, Cappelleri JC, Smith MD, et al. Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res* 1999;11:319–326.
49. Weinfurt KP, Lin L, Bruner DW, et al. Development and initial validation of the PROMIS((R)) sexual function and satisfaction measures version 2.0. *J Sex Med* 2015;12:1961–1974.
50. Althof SE, Corty EW, Levine SB, et al. EDITS: Development of questionnaires for evaluating satisfaction with treatments for erectile dysfunction. *Urology* 1999;53:793–799.
51. Cappelleri JC, Althof SE, O'Leary MP, et al. Clinically meaningful improvement on the Self-Esteem and Relationship questionnaire in men with erectile dysfunction. *Qual Life Res* 2007;16:1203–1210.
52. Wei JT, Dunn RL, Litwin MS, et al. Development and validation of the expanded prostate cancer index composite (EPIC) for comprehensive assessment of health-related quality of life in men with prostate cancer. *Urology* 2000;56:899–905.
53. Santos-Iglesias P, Walker LM. Psychometric validation of the sexual distress scale in men with prostate cancer. *J Sex Med* 2018;15:1010–1020.
54. Hellstrom WJ, Feldman R, Rosen RC, et al. Bother and distress associated with Peyronie's disease: Validation of the Peyronie's disease questionnaire. *J Urol* 2013;190:627–634.
55. Rosen R, Brown C, Heiman J, et al. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191–208.
56. Esposito K, Ciotola M, Giuliano F, et al. Effects of intensive lifestyle changes on erectile dysfunction in men. *J Sex Med* 2009;6:243–250.
57. Meldrum DR, Gambone JC, Morris MA, et al. A multifaceted approach to maximize erectile function and vascular health. *Fertil Steril* 2010;94:2514–2520.
58. Carto C, Pagalavan M, Nackeeran S, et al. Consumption of a healthy plant-based diet is associated with a decreased risk of erectile dysfunction: A cross-sectional study of the National Health and Nutrition Examination Survey. *Urology* 2022;161:76–82.
59. Bacon CG, Mittleman MA, Kawachi I, et al. Sexual function in men older than 50 years of age: results from the health professionals follow-up study. *Ann Intern Med* 2003;139:161–168.
60. Symon Z, Daignault S, Symon R, et al. Measuring patients' expectations regarding health-related quality-of-life outcomes associated with prostate cancer surgery or radiotherapy. *Urology* 2006;68:1224–1229.
61. Walker LM, Wassersug RJ, Robinson JW. Psychosocial perspectives on sexual recovery after prostate cancer treatment. *Nature Rev Urol* 2015;12:167–176.
62. Wittmann D, Mehta A, Northouse LL, et al. TrueNTH sexual recovery study protocol: a multi-institutional collaborative approach to developing and testing a web-based intervention for couples coping with the side-effects of prostate cancer treatment in a randomized controlled trial. *BMC Cancer* 2017;17:1–13.
63. Wittmann D, Foley S, Balon R. A biopsychosocial approach to sexual recovery after prostate cancer surgery: The role of grief and mourning. *J Sex Marital Ther* 2011;37:130–144.
64. Wittmann D, Mehta A, Bober SL, et al. TrueNTH Sexual Recovery Intervention for couples coping with prostate cancer: Randomized controlled trial results. *Cancer* 2022;128:1513–1522.
65. Rosser BRS, Capistrant B, Torres B, et al. The effects of radical prostatectomy on gay and bisexual men's mental health, Sexual identity and relationships: Qualitative results from the restore study. *Sex Relation Ther* 2016;31:446–461.
66. Ramirez-Fort MK, Suarez P, Carrion M, et al. Prostatic irradiation-induced sexual dysfunction: a review and multidisciplinary guide to management in the radical radiotherapy era (Part I defining the organ at risk for sexual toxicities). *Rep Pract Oncol Radiother* 2020;25:367–375.
67. Dowsett GW, Lyons A, Duncan D, et al. Flexibility in men's sexual practices in response to iatrogenic erectile dysfunction after prostate cancer treatment. *Sex Med* 2014;2:115–120.

68. Burnett AL. Racial disparities in sexual dysfunction outcomes after prostate cancer treatment: Myth or Reality? *J Racial Ethn Health Disparities* 2016;3:154–159.
69. Namiki S, Kwan L, Kagawa-Singer M, et al. Sexual function following radical prostatectomy: a prospective longitudinal study of cultural differences between Japanese and American men. *Prostate Cancer Prostat Dis* 2008;11:298–302.
70. Jenkins R, Schover LR, Fouladi RT, et al. Sexuality and health-related quality of life after prostate cancer in African-American and white men treated for localized disease. *J Sex Marital Ther* 2004;30:79–93.
71. Sterling J, Garcia MM. Cancer screening in the transgender population: A review of current guidelines, best practices, and a proposed care model. *Transl Androl Urol* 2020;9:2771–2785.
72. Fogel J, Ribisl KM, Morgan PD, et al. Underrepresentation of African Americans in online cancer support groups. *J Natl Med Assoc* 2008;100:705–712.
73. Hartman M-E, Irvine J, Currie KL, et al. Exploring gay couples' experience with sexual dysfunction after radical prostatectomy: A qualitative study. *J Sex Marital Ther* 2014;40:233–253.
74. Wittmann D. Integrating post-prostatectomy: the couple's journey. In: Ussher J, Perz J, Rosser BR, editors. *Gay and bisexual men living with prostate cancer: from diagnosis to recovery*. New York, NY: Harrington Park Press, LCC; 2018.
75. Allensworth-Davies D, Blank TO, de Vries B, et al. Toward a more comprehensive model of prostate cancer care inclusive of gay and bisexual men and transgender women. In: Ussher J, Perz J, Rosser. B, editors. *Gay and bisexual men living with prostate cancer*. New York, NY: Harrington Park Press; 2018.
76. Mitteldorf D. Twenty years of innovation and service to gay and bisexual men and transgender women with prostate cancer. In: Ussher J, Perz J, Rosser BR, editors. *Gay & Bisexual Men Living with Prostate Cancer*. New York, NY: Harrington Park Press; 2018.
77. Head L, Witiuk K, et al. The risks and benefits of cavernous neurovascular bundle sparing during radical prostatectomy: A systematic review and meta-analysis. *J Urol* 2017;198:760–769.
78. McLaughlin PW, Narayana V, Meirovitz A, et al. Vessel-sparing prostate radiotherapy: dose limitation to critical erectile vascular structures (internal pudendal artery and corpus cavernosum) defined by MRI. *Int J Radiat Oncol Biol Phys* 2005;61:20–31.
79. Padma-Nathan H, McCullough AR, Levine LA, et al. Randomized, double-blind, placebo-controlled study of postoperative nightly sildenafil citrate for the prevention of erectile dysfunction after bilateral nerve-sparing radical prostatectomy. *Int J Impot Res* 2008;20:479–486.
80. Montorsi F, Brock G, Lee J, et al. Effect of nightly vs on-demand vardenafil on recovery of erectile function in men following bilateral nerve-sparing radical prostatectomy. *Eur Urol* 2008;54:924–931.
81. Kohler TS, Pedro R, Hendlin K, et al. A pilot study on the early use of the vacuum erection device after radical retropubic prostatectomy. *BJU Int* 2007;100:858–862.
82. Toussi A, Zieglemann M, Yang D, et al. Efficacy of a novel penile traction device in improving penile length and erectile function post prostatectomy: Results from a single-center randomized, controlled trial. *J Urol* 2021;206:416–426.
83. Frey A, Pedersen C, Lindberg H, et al. Prevalence and predicting factors for commonly neglected sexual side effects to radical prostatectomies: Results from a cross-sectional questionnaire-based study. *J Sex Med* 2014;11:2318–2326.
84. Salonia A, Castagna G, Capogrosso P, et al. Prevention and management of postprostatectomy sexual dysfunctions part 2: Recovery and preservation of erectile function, sexual desire, and orgasmic function. *Eur Urol* 2012;62:273–286.
85. Anderson RU, Wise D, Sawyer T, et al. Sexual dysfunction in men with chronic prostatitis/chronic pelvic pain syndrome: Improvement after trigger point release and paradoxical relaxation training. *J Urol* 2006;176(4 Pt 1):1534–1538 discussion 1538–9.
86. Rosenbaum TY, Owens A. The role of pelvic floor physical therapy in the treatment of pelvic and genital pain-related sexual dysfunction (CME). *J Sex Med* 2008;5:513–523 quiz 524–5.
87. Kannady C, Clavell-Hernandez J. Orgasm-associated urinary incontinence (climacturia) following radical prostatectomy: A review of pathophysiology and current treatment options. *Asian J Androl* 2020;22:549–554.
88. Christine B BA. Climacturia following radical prostatectomy: the time is now to query and treat. *J Sex Med* 2018;15: S230–S231.
89. Yafi FA, Andrianne R, Alzweri L, et al. Andrianne mini-jupette graft at the time of inflatable penile prosthesis placement for the management of post-prostatectomy climacturia and minimal urinary incontinence. *J Sex Med* 2018;15:789–796.
90. Valenzuela RJ ZM, Hillelsohn JH, Farrell MR, et al. Preliminary outcomes of the male urethral “mini-sling”: A modified approach to the Andrianne Mini-Jupette procedure with penile prosthesis placement for climacturia and mild stress urinary incontinence. *J Sex Med* 2019;16:1310–1317.
91. Pastuszak AW, Pearlman AM, Lai WS, et al. Testosterone replacement therapy in patients with prostate cancer after radical prostatectomy. *J Urol* 2013;190:639–644.
92. Balbontin FG, Moreno SA, Bley E, et al. Long-acting testosterone injections for treatment of testosterone deficiency after brachytherapy for prostate cancer. *BJU Int* 2014;114: 125–130.
93. Pastuszak AW, Pearlman AM, Godoy G, et al. Testosterone replacement therapy in the setting of prostate cancer treated with radiation. *Int J Impot Res* 2013;25:24–28.
94. Morgentaler A, Lipshultz LI, Bennett M, et al. Testosterone therapy in men with untreated prostate cancer. *J Urol* 2011;185:1256–1260.

95. Cormie P, Zopf EM. Exercise medicine for the management of androgen deprivation therapy-related side effects in prostate cancer. *Urol Oncol* 2020;38:62–70.
96. Jonsdottir JI, Zoega S, Saevarsdottir T, et al. Changes in attitudes, practices and barriers among oncology health care professionals regarding sexual health care: Outcomes from a 2-year educational intervention at a University Hospital. *Eur J Oncol Nurs* 2016;21:24–30.
97. Byers E. Beyond the birds and the bees and was it good for you?: Thirty years of research on sexual communication. *Canadian Psychol* 2011;52:20–28.
98. Flynn KE, Reese JB, Jeffrey DD, et al. Patient experiences with communication about sex during and after treatment for cancer. *Psychooncology* 2012;21:594–601.
99. Kotronoulas G, Papadopoulou C, Patiraki E. Nurses' knowledge, attitudes, and practices regarding provision of sexual health care in patients with cancer: critical review of the evidence. *Support Care Cancer* 2009;17:479–501.
100. Matthew, A., The Sexual Health & Rehabilitation e-Training program (SHARE-T) has produced good outcomes specific to sexual health training in prostate cancer using a web-based design D. McLeod, Editor. 2021.
101. Griggs J, Maingi S, Blinder V, et al. American society of clinical oncology position statement: strategies for reducing cancer health disparities among sexual and gender minority populations. *J Clin Oncol* 2017;35:2203–2208.
102. Bamidele O, McGarvey H, Lagan BM, et al. Life after prostate cancer: A systematic literature review and thematic synthesis of the post-treatment experiences of Black African and Black Caribbean men. *Eur J Cancer Care (Engl)* 2018;27. doi: 10.1111/ecc.12784. E-pub ahead of print.
103. Hicks EM, Litwin MS, Maliski SL. Latino men and familial risk communication about prostate cancer. *Oncol Nurs Forum* 2014;41:509–516.
104. Choi SK, Seel JS, Yelton B, et al. Prostate cancer information available in health-care provider offices: An analysis of content, readability, and cultural sensitivity. *Am J Mens Health* 2018;12:1160–1167.
105. Zhu A, Wittmann D. Barriers to sexual recovery in men with prostate, bladder and colorectal cancer. *Urol Oncol* 2020;40:395–402.
106. Masterson JM, Kava B, Ramasamy R. Commercial Insurance coverage for inflatable penile prosthesis at a tertiary care center. *Urol Pract* 2019;6:155–158.
107. Mishra K, Bukavina L, Mahran A, et al. Variability in prices for erectile dysfunction medications-are all pharmacies the same? *J Sex Med* 2018;15:1785–1791.