

Psychosocial interventions to support partners of men with prostate cancer: a systematic and critical review of the literature

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Abstract

Purpose Prostate cancer poses many challenges for both the man and his partner. Partners have reported a range of issues that impact their own mental health following their partner's diagnosis of prostate cancer. The aim of this review is to summarise and critically evaluate the current literature reporting psychosocial intervention studies for partners of prostate cancer patients.

Methods An extensive literature search of electronic databases was conducted (OvidMEDLINE 1946, 26th September 2013, and psychINFO 1967, 26th September 2013) using the keywords *prostate cancer AND intervention**

OR therapy OR psychosocial intervention* OR support* AND couple* or Spouse* or Partner* or Intimate partner** matched to the title as well as secondary scanning of reference lists. Studies were included if they described interventions for partners of prostate cancer patients, either solely for the partners or as a couple, intended to alleviate distress and enhance the partner's or couple's quality of life, and reported a measurable outcome for partners.

Results A total of 11 prostate cancer-specific intervention studies that included partners and reported separate results for the partners were found. Only one of these interventions was partner specific, the other eight involved the patient-partner dyad. The studies identified primarily focussed on two areas: emotional distress and sexual intimacy, and mixed findings were reported for efficacy of interventions.

Conclusions Despite strong evidence that partners of men with prostate cancer experience difficulties associated with the impact of prostate cancer, there is limited research that has investigated the efficacy of psychosocial interventions for partners. Of the reviewed studies, it is evident that interventions targeting the reduction of emotional distress, improved communication and sexual intimacy between the couple and utilisation of strategies that enable partners to express their distress, learn new strategies and implement behavioural change show the most promising results in enhancing partner well-being.

Implications for Cancer Survivors Significant progress is required in developing and evaluating appropriate and effective psychosocial support interventions for partners of prostate cancer survivors as partners appear to have significant unmet needs in this area.

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Background

Cancer of the prostate (CaP) is the most common cancer diagnosis in Australia (excluding non-melanocytic skin cancer), with approximately 20,000 new cases diagnosed each year [1]. The major morbidities associated with treatment of localised prostate cancer include incontinence of bladder and bowel, sexual dysfunction and psychological trauma [2–5]. These morbidities are extant in all of the different prostate cancer treatment modalities, albeit at varying rates at different stages of treatment, and understandably have an impact not only on the patient but also on the partner. In addition to the shock of diagnosis, the partner may have to adjust to role change, interruption to daily life, financial worries and strain on marital and sexual satisfaction [6–8]. Open communication within the spousal dynamic is said to play an important role in the positive adjustment of couples coping with prostate cancer [9, 10]; however, research in prostate cancer has also indicated that both partners tend to suppress emotions, worries and concerns in order to protect their loved one [11]. Some partners have also reported that they limit exchanges regarding feelings for fear they might create problems within the relationship or because they did not expect their husbands to open up to them [10]. This phenomenon is known as protective buffering, and research has indicated that there is a strong positive association between protective buffering and higher levels of patient/partner distress [11].

Partners have reported a range of issues that impact their mental health following their partner's diagnosis of CaP, including ongoing distress and worry about cancer recurrence, changes in the sexual and intimate relationship, mood state of the man, disruptions to usual social and domestic relationships and poor communication within the couple [12–14]. Indeed, partners of men with prostate cancer have been reported to experience higher levels of distress and emotional disturbance than the patients themselves [6, 15]. Healthcare professionals understandably tend to focus on the patient; however, this can result in the partner feeling isolated, lacking information and professionally unsupported [9]. Pitceathly and Maguire [12] found that although most partners and family members cope well with their new role as caregiver, a significant proportion becomes highly distressed and at risk of developing mental health disorders such as anxiety and depression.

Partners are typically eager to gather as much information as possible and have been noted to play an influential role in patients' ability to adapt to, and cope with, their illness [16, 17]. Evertson and Wolkenstein [18] noted one participant in their study as saying that although she was interested in finding out as much as she could about the diagnosis and available treatment options, her husband did not want to "face the reality". Shock can play a significant role in this response

[17]. Carlson et al. [9] noted that in order to decrease the negative effect of cancer on the quality of life (QoL) of both couple members, it is important that they are able to maintain a sense of control during the decision-making process. Once the initial shock has subsided, the majority of patients and partners acknowledge that they would like as much information as possible yet find it difficult to have all the correct information on hand at the right time [17, 19]. Unfortunately, in some cases, important facts often come to light after the relevant time period or by accident [19].

Feltwell and Rees [17] documented that partners both sought and avoided information. Partners engaged in information-seeking behaviours in order to reduce their anxiety and uncertainty about the future and to be better able to support their partner through his illness [17]. However, other partners avoided information seeking in a bid to reduce their fear and to try and maintain a sense of normality [17]. Some patients themselves engaged in minimisation of the severity of their illness and its implications in order to maintain some semblance of normality and to try and relieve the emotional effect of the illness on the couple [7, 8]. This appears to align with the documented monitoring and blunting coping approaches to cancer and information seeking [20].

Supporting a partner with prostate cancer can take a high emotional toll on the caregiving spouse [21] with many reporting feeling lonely and isolated [9, 19, 21]. Hence, there is a need for additional support for partners. Managing the changes to intimacy can also have a significant impact on the partner and the couple's relationship. Although many men believe that their partners are unaffected by the loss of sexuality [10], Neese found that 38 % of women were not entirely satisfied with the couple's current sexual relationship [22]. Women generally take a philosophical approach in dealing with impotence and value their partner's survival over sexual function [22]. Many men, however, refrain from any emotional intimacy and displays of affection for fear this might lead to sexual expectation, and it is this loss of emotional intimacy that appears to impact significantly on female partners [14]. Studies have found that open communication relating to sexual functioning and intimacy within the couple leads to a higher QoL and greater marital adjustment [8, 23]. Very little has been written about the experiences of partners of gay men with prostate cancer. One qualitative study reported that both the patient and his partner identified strains and changes in their romantic relationship as well as their relationship with other gay men [24].

The aim of this review is to summarise and critically evaluate the current literature reporting psychosocial intervention studies for partners of prostate cancer patients. A full evaluation of the current research, including the methodologies used and the effectiveness of interventions, will provide a synthesis of the research to date and highlight areas for future research.

Method

Search strategy

Identification of relevant studies was conducted using a two-stage process. Stage 1 involved an extensive systematic search of electronic databases (OvidMEDLINE 1946, 26th September 2013, and psychINFO 1967, 26th September 2013) using the keywords *prostate cancer OR prostate carcinoma AND intervention* OR therapy* OR psychosocial intervention* OR support* OR workshop* OR education* AND couple* or Spouse* or Partner* or Intimate partner**. Stage 2 involved a review of the abstracts for relevance according to the inclusion criteria listed below. Short-listed articles were then retrieved in full and further assessed as to whether they met the inclusion criteria. The reference lists of all articles were also reviewed to identify any other relevant studies that had been missed using this search strategy.

Inclusion criteria

Studies were included if they described relevant interventions for partners of prostate cancer patients, either solely for the partners or as a couple, intended to alleviate distress and enhance the couple's quality of life, and reported a measurable outcome for partners.

Exclusion criteria

Studies were excluded if they did not describe the efficacy of an intervention, were case studies or were review papers.

Results

Electronic database searches yielded a total of 621 records. These records were then reviewed, and only studies that described and evaluated psychosocial support interventions for couples together or partners or spouses of a man diagnosed with prostate cancer alone and reported outcome data for the partner or spouse were included. All review, protocol and descriptive papers were excluded. A total of nine papers met the inclusion criteria, and a review of the references of these papers yielded a further two papers. This resulted in a total of eleven prostate cancer-specific intervention studies that included partners and reported separate results for the partners. These are summarised in Table 1. Only one of these interventions was partner specific; the other eight involved the patient-partner dyad. Two key themes of the interventions were identified; enhancing emotional state and sexual intimacy which were targeted in the interventions either via education or psychological therapeutic intervention.

Study characteristics and design

Participant recruitment

All but three [25–27] of the intervention studies were conducted in the USA. The studies recruited from hospital services [16, 25–32], cancer registries [33] or both [34]. Inclusion criteria for partners were explicitly stated in some papers, including a spouse or partner living with the patient diagnosed with prostate cancer [16, 29, 32], a married partner/spouse or living with the patient for at least 1 year [25, 33] and intimate partners with whom the patient is married or has a committed relationship, including same-sex relationships [26–28, 34]. One study did not define partner characteristics [30], and one study included partners from the patient's social network, and not necessarily the spouse, although 83 % did select their spouse in this study and was included in this review on this basis [31].

Sample characteristics

The intervention studies recruited a range of partner groups; however, the majority of partners in these studies were married female spouses who had been in the relationship for longer than 25 years. Mean partner age was similar across all studies but ranged from 55 years [29] to 64 years [25]. Of note, one study [33] reported that spouses who dropped out of the intervention were significantly younger than those who adhered to the program. Stage of patient disease was variable across and within studies. The majority of studies included various stages of disease and a variety of treatment types. One study [32] purposively recruited participants for each stage of disease including new diagnosis, new biochemical recurrence or new metastases or progression of disease; another [28] recruited only patients undergoing radical prostatectomy and another recruited only men who were currently receiving androgen deprivation therapy [27]. Time since treatment was also variable across and within studies.

Study quality

The majority of intervention studies identified compared the intervention to a control group or standard care [16, 26–29, 32, 34] or presented a comparison of two interventions [31, 33], whilst two studies presented a pilot evaluation of the intervention alone [25, 30] and one used a wait-list design for a portion of their participants [26]. The majority of those studies that compared two conditions used randomisation procedures to allocate group participation [16, 27–29, 31, 32, 34] or minimisation procedures [33]. Sample size ranged from 12 couples [25] to 263 couples [32]; however, the majority of intervention studies identified reported small to medium samples.

Table 1 Summary of the reviewed papers

Study (location)	Nature of intervention trial	Intervention content	Theoretical framework of intervention (category)	Treatment groups	Sample size and characteristics	Outcome measures	Assessment times	Findings
Maune et al., 2004 [16] (USA)	Partner only weekly psycho-educational group sessions for six weeks	Medication, nutrition, stress, communication, social support, intimacy/sex, survivorship	(1) Psycho-education combined with cognitive behavioural therapy strategies (emotional state)	(1) Intervention (2) Standard care	N=60 women living with or married to man with prostate cancer M age=59.63	General and cancer-specific distress (MHI, IES); cancer-specific marital interactions (CPO); coping (COPE); post-traumatic growth (PTGI)	Baseline and 1-month post-intervention	No significant differences for general or cancer-specific distress; however, women receiving the intervention reported greater post-traumatic growth, more use of positive reappraisal and less use of denial coping.
Canada et al., 2005 [33] (USA)	Four sessions of psychologist or counsellor-led counselling and homework exercises	Sexual history, sexual impact of prostate cancer treatment, treatments for erectile dysfunction, coping with male incontinence and female menopausal dryness	(1) Cognitive behavioural therapy and psycho-educational components were used to enhance knowledge, teach communication skills and target behaviour change. (sexual intimacy)	(1) Counselling with partner (2) Patient received individual counselling	N=84 couples, randomised and 51 couples completed the intervention. One member of the couple had received surgery or radiation therapy for prostate cancer 3–60 months previously. M age: patient 65.5, partner 61.8	General distress (BSI), marital satisfaction (A-DAS); erectile functioning (IIEF) (patients only); information on use of medical treatment, urinary and bowel symptoms (UCLA PCI) (patients only); health-related QoL (PCS and MCS subscales of SF-36); sexual function (FSFI) (partners only); menopausal symptoms (BCPT) (partners only)	Baseline, post-treatment, 3-month post-treatment and 6-month post-treatment	There were no differences between individual and couple counselling. Compared to baseline, males showed less general distress (BSI) at 3-month post-assessment and improved sexual satisfaction at 3- (IIEF, global score and most subscales) and 6- (IIEF, global score only) month post-assessment. Compared to baseline, partners showed improved sexual satisfaction at 3- (IIEF, global score and all subscales) and 6- (IIEF, global score only) month post-assessment.
Northouse et al., 2007 [32] (USA)	Supportive-educative intervention for couples, in the form of three 90 min home visits and two 30 min telephone sessions delivered over 4 months	Family involvement, optimism, coping, uncertainty reduction, symptom management	(1) Supportive-educative family intervention that utilised psycho-education, information provision and general counselling approaches. (emotional state)	(1) Intervention plus standard care from patient's treating cancer centre (2) Standard care alone	N=263 couples, one of whom with a new diagnosis of prostate cancer, new biochemical recurrence or new metastases or progression of disease. M age: patient 63, partner 59	General distress (symptom scale of the OSQ); risk of developing future distress (OSO, baseline only); prostate cancer-specific QoL (EPIC); QoL (MOS SF-12); cancer-specific QoL (FACT-G, version 4); prostate-specific QoL (FACT-P); appraisal of illness (appraisal of illness scale); illness uncertainty (Mischel uncertainty in illness scale); illness hopelessness (Beek hopelessness scale); coping strategies (brief coping orientations to problems experienced scale); self-efficacy	Baseline, 4, 8 and 12 months	At 4-month follow-up, intervention patients were experiencing better communication with spouses and less uncertainty compared with control patients. Compared with control spouses, intervention spouses were experiencing higher quality of life, less negative caregiving appraisal, hopelessness and symptom distress and better communication in 4 months. At 8-month follow-up, intervention spouses were experiencing better

Table 1 (continued)

Study (location)	Nature of intervention trial	Intervention content	Theoretical framework of intervention (category)	Treatment groups	Sample size and characteristics	Outcome measures	Assessment times	Findings
Campbell et al., 2007 [34] (USA)	Weekly couple sessions of telephone-delivered coping skills training for six weeks	Information on prostate cancer, problem-solving, communication, activity relaxation, activity pacing	(1) Skills training intervention based on problem-solving and cognitive behavioural therapy strategies. (emotional state)	(1) Intervention (2) Standard care	<i>N</i> =40 couples, the patient being African-American and beyond the acute diagnosis and treatment phase of prostate cancer <i>M</i> age: patient 62.1, partner 58.7	General QoL (physical function and mental health scales of the SF-36); cancer-specific QoL (EPIC); self-efficacy (SESCI); QoL (POMS-SF and CSI) (partners only); partner self-efficacy (partner version of SESC)	Baseline and post-treatment	Patients in the intervention group, compared to control patients, reported statistically significantly higher quality of life in terms of being less bothered by bowel symptoms. Partners in the intervention group reported less caregiver strain, depression and fatigue and more vigour, compared to control partners; however, none of these outcomes measure reached statistical significance.
McCorkle et al., 2007 [28] (USA)	Eight home visits and eight telephone contacts to patient and partner over an 8-week period, after radical prostatectomy, delivered by advanced practice nurse	Patient care needs, managing prostate cancer symptoms, treatment preparation, managing treatment side effects, self-care strategies, using community and social support, communication, problem solving	(1) A clinical management protocol-based intervention focussed on symptom management and strategies to promote marital communication and psychosocial function. (sexual intimacy)	(1) Intervention+ standard care (2) Standard care only	<i>N</i> =107 couples, one of whom newly diagnosed and elected to receive radical prostatectomy <i>M</i> age: patient 59.9, partner 56	Depressive symptoms (CES-D); sexual function and marital interaction (two subscales of CARES)	Baseline and 1, 3 and 6 months after surgery	Partners in the intervention group reported higher distress related to sexual function and marital interaction at 6-month post-surgery than partners in the control group. Partners in the intervention group reported higher depression and fatigue and more vigour, compared to control partners; however, none of these outcomes measure reached statistical significance.
Mame et al., 2011 [29] (USA)	Five couple sessions of intimacy enhancing therapy (IET)	Improving couple's ability to comfortably share their thoughts and feelings regarding cancer. Promoting mutual understanding and support regarding one's own and one another's cancer experience. Facilitating constructive discussion of cancer	(1) A cognitive behavioural and marital therapy based intervention that focussed on open communication, comfortable expression of thoughts and feelings and maintaining and enhancing emotional intimacy (emotional state)	(1) Intervention (2) Standard psychosocial care (social work consultations+ psychologist/psychiatrist referral if required)	<i>N</i> =71 couples, one of whom had been diagnosed with localised prostate cancer in the last year <i>M</i> age: patient 60, partner 55.7	General distress (psychological distress scale of mental health inventory); cancer-specific distress (IES); well-being (psychological well-being scale of mental health inventory); cancer concerns (items developed by authors);	Baseline and 2-month post-baseline	There was a marginal effect on survivor well-being when controlling for individual factors for those in the intervention group, compared to the control group. There were no significant effects for partners.

Table 1 (continued)

Study (location)	Nature of intervention trial	Intervention content	Theoretical framework of intervention (category)	Treatment groups	Sample size and characteristics	Outcome measures	Assessment times	Findings
Badger et al., 2011 [31] (USA)	Comparison of two couple-based telephone-delivered interventions which aimed to improve emotional well-being and quality of life	Intervention 1: interpersonal therapy (TIP-C) delivered by a masters level nurse or social worker consisting of an 8-week telephone interpersonal counselling intervention addressing (1) mood and affect management; (2) emotional expression; (3) interpersonal communication and relationships; (4) social support and (5) cancer information. Partners received an individual therapy session every other week (total 4), whilst the patient received eight consecutive sessions Intervention 2: health education attention condition (HEAC) delivered by a trained research assistant consisting of an 8-week educational intervention delivered over the telephone. The intervention provided written materials from the National Cancer Institute about prostate cancer	(1) Intervention 1 focussed on interpersonal counselling. Intervention 2 focussed on the provision of health education (emotional state)	(1) Interpersonal therapy (TIP-C) (2) Health education attention condition (HEAC)	N=71 men with prostate cancer (any stage) and 70 partners (83 % spouse or intimate partner) M age: patient 67; partner 61	relationship satisfaction (DAS); relationship intimacy (PAIR); communication (measures of self-disclosure, partner disclosure, and perceived partner responsiveness developed by authors; mutual constructive communication and demand-withdraw subscales of CPQ)	Baseline, week 8 (completion of intervention) and week 16 (8-week follow-up)	However, significant moderator effects were found indicating that the treatment's effects were moderated by both individual distress and by relationship characteristics of the couple. Couples who began with fewer personal or relationship resources showed significant improvements, whilst those who started with higher individual or relationship functioning showed no change or a detrimental effect of the intervention. The results revealed superior outcomes in improvements in QoL for the HEAC intervention for both prostate cancer patients and their partners. Partners in both intervention conditions experienced statistically significant reductions in depression. However, partners who received the HEAC intervention showed significantly greater improvements in QoL than those who participated in the TIC-C intervention.

Table 1 (continued)

Study (location)	Nature of intervention trial	Intervention content	Theoretical framework of intervention (category)	Treatment groups	Sample size and characteristics	Outcome measures	Assessment times	Findings
Collins, et al., 2013 [25] (Australia)	A pilot evaluation of six 90-min sessions of cognitive existential couple therapy (CECT) for newly diagnosed prostate cancer patients and their partners and led by mental health professionals (clinical psychologists and psychiatrists)	diagnosis and treatments and health-related topics. Partners received a telephone call every other week (total 4), whilst the patient received eight consecutive sessions CECT focussed on key existential and functional themes including (1) death anxiety; (2) fear of recurrence and living with uncertainty; (3) coping with cancer treatments and their side effects; (4) the impact of the diagnosis and treatment on the couple's relationship, including sexual impact; (5) relating with medical and other professional staff; (6) family concerns; (7) body image and self image concerns and (8) lifestyle effects and future goals	Cognitive-existential therapy integrating cognitive behavioural therapeutic techniques with supportive-expressive therapy techniques. (emotional state)	CECT intervention group only	N=12 men undergoing treatment for localised prostate cancer (recently diagnosed) and their partners. Couples had to have been married or living together for at least 1 year. M age=64	Psychological distress (MHI and the IES-R); marital function (FRI); cancer support inventory; coping (BCOPE and BFS)	Pre-intervention and post-intervention	There was a decrease in the total IES-R scores as well as the hyperarousal and avoidance subscales for both patients and partners pre- to post-interventions. There were no other significant changes in scores on the MHI, FRI, CSI, BCOPE and BFS measures.
Wittmann, et al., 2013 [30] (USA)	A pilot evaluation of a 1-day psycho-educational couple group enhance sexual recovery of men surgically treated for prostate cancer and their partners. Delivered by a urologist, a urologic nurse practitioner, a urologic nurse and a social worker who was an accredited sex therapist	Structured psycho-education delivered by this education session focussed on the sexual impact of prostate cancer surgery, sexual rehabilitation options, the effect of menopause on female sexual response, loss and grief and couple focussed psychosexual factors. The group also provided clinician-facilitated small group discussion focussed on couple's experiences	Psycho-educational intervention which focussed on education about available resources for sexual functioning, encourage communication and challenge beliefs about sex. (sexual intimacy)	Psycho-educational group intervention only	N=26 couples Average time since surgery was 3 years and 42 % of patients required further treatment M age: patients 67, partners 65.	Satisfaction questionnaire (non-validated), erectile dysfunction help-seeking questionnaire; protective buffering questionnaire; the sexual information and recovery activities questionnaire (non-validated)	Pre-intervention, post-intervention and 3- and 6 month follow-up post-interventions	The format of the couple-based group psycho-educational retreat was acceptable to participants. Self-reported knowledge was significantly higher at 3- and 6-month post-interventions for patients and partners. Partners reported that they viewed erections as less critical for the man in order to seek or have sexual relationship or satisfaction at 3- and 6-month post-interventions as compared to baseline. Partners and patients both reported being more able to sustain a discussion about sex at 3- and 6-month post-interventions compared to baseline.

Table 1 (continued)

Study (location)	Nature of intervention trial	Intervention content	Theoretical framework of intervention (category)	Treatment groups	Sample size and characteristics	Outcome measures	Assessment times	Findings
Walker, et al., 2013 [27] (Canada)	A pilot RCT evaluation of a couple-based educational intervention delivered at the time of commencing androgen deprivation therapy	A 70-page educational booklet which provided information about the side effects of androgen deprivation therapy was given to couples at the point of commencing ADT. Two weeks later, the couple attended a 1-h educational review session with the researchers where questions about the information were addressed.	A psycho-educational intervention that focussed on the provision of information with the addition of a 1-hour education session where couples could ask questions. (sexual intimacy)	(1) Intervention group (2) Usual care control group	N=27 couples mean age of patients was 73 years (range 52–85). No age data was collected for partners. All patients were commencing ADT for prostate cancer.	Current level of intimacy in the relationship (PAIR); dyadic adjustment (DAS)	Baseline and 6-month post-intervention	Partners reported that they used less protective buffering and felt more able to discuss sexual concerns with the man at 6-month post-intervention, compared to baseline. Intimacy and dyadic adjustment scores from baseline to follow-up were not statistically significant between the intervention and control groups. A medium effect size was found for patient intimacy change scores with the intervention group scoring higher than the control group. This effect was not found for partners. A large effect size was found for patient dyadic adjustment change scores with the intervention group scoring higher than the control group. A medium effect size for partner dyadic adjustment change scores were found in the same direction. A higher proportion of participants in the intervention group also remained sexually active (21 %) compared to the control group (4 %).
Hampton et al., 2013 [26] (Canada)	A pilot feasibility evaluation of a brief (3.5 h) couple's workshop about sexuality following prostate cancer treatment.	Didactic education, self-assessment worksheets and experiential exercises about behavioural strategies for penetrative and non-penetrative sex. The intervention was based on the information-motivation-behavioural skills model of behaviour change.	A behaviour change intervention based on the information-motivation-behavioural skills model. This intervention focussed on motivating behaviour change and included behavioural exercises and communication strategies. (sexual intimacy)	(1) Intervention group (2) Wait-list control group	N= 14 patients and 12 partners in the wait-list control group. Patient mean age=66 years; 85.7 % of patients had undergone radical prostatectomy. Partner mean age=60 year N= 24 patients and 19 partners in the intervention group. Patient mean age=	Participant demographics; sexual function, sexual activity, sexual interest, desire, arousal, orgasm and satisfaction (SFQ); feasibility and acceptability was also explored by collecting data regarding workshop accrual rates, questionnaire completion	Wait-list control 2 months prior to intervention. Intervention participant baseline and 2-month post-intervention.	All acceptability and feasibility requirements were met. The sexual function questionnaire indicated general improvements for patients and partners following the intervention. Medical impact scores significantly improved for both patients and

Table 1 (continued)

Study (location)	Nature of intervention trial	Intervention content	Theoretical framework of intervention (category)	Treatment groups	Sample size and characteristics	Outcome measures	Assessment times	Findings
					63 years; 87.5 % of patients had undergone radical prostatectomy. Partner mean age= 58 years All participants were heterosexual	rates and questionnaire sensitivity data		partners in the intervention group as compared to the wait-list control. Partners also demonstrated significant gains in sexual interest, sexual problems and total sexual function. Four common participant goal themes emerged: (1) making time for intimacy; (2) experimenting with erection aids; (3) experimenting with non-penetrative forms of sex and (4) placing a focus on communication. At follow-up, 32 % of patients and 33 % of partners reported they had achieved at least one of their goals.

A-DAS dyadic adjustment scale, *BCOPE* brief cope, *BCPTT* breast cancer prevention trial symptom checklist, *BFS* benefit-finding scale, *BFI* brief symptom inventory, *CARES* cancer rehabilitation evaluation system, *CES-D* centre for epidemiological studies depression scale, *CSF* caregiver strain index, *CPQ* the communication patterns questionnaire, *DAS* dyadic adjustment scale, *ED* erectile dysfunction scale, *EPIC* expanded prostate cancer index composite, *FSFI* female sexual function index, *FACIT-G* functional assessment of cancer treatment (general), *FHCT-P* functional assessment of cancer treatment (prostate), *FRI* family relationship index, *IES* impact of events scale, *IES-R* impact of events scale-revised, *IIEF* international index of erectile dysfunction, *MCS* mental health subscale, *MFI* multidimensional fatigue inventory, *MHI* mental health inventory, *MOS SF-12* medical outcomes study 12-item short form, *OSQ* omega screening questionnaire, *PAIR* personal assessment of intimacy in relationships, *PANAS* positive and negative affect schedule, *PCS* physical health subscale, *POMS-SF* profile of mood states-short form, *PSSSEFA* perceived social support-family scale, *PTGI* post-traumatic growth inventory, *SEESCI* self-efficacy for symptom control inventory, *SF-36* short form health survey, *SFQ* the sexual function questionnaire, *UCLA PCI* UCLA prostate cancer index

Interventions focussed on emotional state

Six studies focussed on relieving distress and improving emotional well-being. Intervention types included psycho-education, coping skills development as well as intensive couple-based therapy.

Psycho-education-based interventions [16, 31, 32] showed mixed but promising results in improving emotional state. Manne et al. [16] found no significant differences for either general distress or cancer-specific distress between participants who took part in the intervention or control groups. However, wives in the intervention group were more likely to report that the prostate cancer experience had made positive contributions to their lives (post-traumatic growth) as well as that the intervention impacted on their use of adaptive coping. Northouse et al. [32] found that their family-based psycho-educational intervention showed improvements for both patients and partners in terms of quality of life, less negative caregiving appraisal, hopelessness and symptom distress and better communication, and these positive outcomes were sustained over the 12-month follow up. Harden et al. [35] investigated the satisfaction of participants with the above intervention and found that both spouses and patients rated it highly. Three key areas were found to be most beneficial, and these were interactions with the nurse (providing them with information relevant to their specific needs and fostering a relaxed environment in which the dyad could openly communicate about uncomfortable topics), including spouses in the discussions (reinforcing the contribution both patient and partner are making to the recovery process and also enabling discussions about emotional and physical problems) and altruism (participating in research thereby helping others in the future). Badger et al. [31] compared a psycho-education intervention (HEAC) with an interpersonal therapy intervention (TIP-C). This study found that the magnitude of benefit was significantly better in the HEAC condition with significantly greater improvements in depression, fatigue, social support from family members, social well-being and spiritual well-being compared to partners receiving TIP-C. It should be noted that the TIP-C also resulted in significant reductions in depression.

Cognitive behavioural- and skills training-based interventions [25, 29, 34] that focussed on improvements in emotional state also showed mixed results. Campbell et al. [34] found that patients were less bothered by bowel symptoms as a result of the intervention. Whilst no outcome measures reached significance for partners, this intervention shows promising results in that the partners reported less caregiver strain, depression and fatigue and more vigour. Unfortunately, this study had a very low participation rate (25 % of eligible participants) and a moderate drop-out rate (25 %) indicating that this study may have been underpowered to detect significant change. The authors reported that qualitatively the participants indicated that CST was beneficial and noted that the

telephone format was very convenient. Manne et al. [29] found that their intimacy-enhancing couple therapy did not yield statistically significant improvements for all couples in the intervention but that there were strong moderator effects whereby those couples who commenced the intervention with fewer personal or relationship resources showed significant gains in these domains. Collins et al. [25] found that their cognitive existential couple therapy reduced the negative impact of the prostate cancer diagnosis, as measured by the IES-R, from pre- to post-interventions as did symptoms of avoidance and hyperarousal for both patients and partners.

Interventions focussing on sexual intimacy

The remaining five studies focussed on improving sexual function and emotional intimacy within the dyad. Intervention approaches included psycho-educational, cognitive behavioural-based interventions and symptom management. All five interventions involved both members of the dyad with one measuring the impact of an intervention both including and excluding the partner [33].

Psycho-education-based interventions focussing on sexual intimacy [27, 30] showed promising but not strong results. Wittmann et al. [30] found that a pilot group-based 1-day psycho-educational workshop resulted in significant improvements in participant self-reported knowledge for both patients and partners. Partners appeared to benefit in terms of changed attitudes towards erections and reductions in protective buffering. Partners viewed erections as less critical for the man's ability to seek or enjoy sexual encounters and were more likely to openly communicate about sexual concerns 3 and 6 months following the intervention. Walker et al. [27] did not find statistically significant effects of their educational intervention but did find medium to large effect sizes for dyadic adjustment. A higher proportion of participants in the intervention group also remained sexually active (21 %) compared to the control group (4 %) [27].

Cognitive behavioural-focussed interventions [26, 33] showed promising results in enhancing sexual intimacy for couples. Canada et al. [33] compared a four-session cognitive behavioural therapy intervention with patients alone to the same intervention delivered as a couple. This study found no difference between outcomes for participants who attended the session with or without their partner present. Despite this, the intervention had a positive impact on both the men and their partner's sexual function and satisfaction. Improvement in female global sexual function was noted at a 3-month follow-up; however, this regressed towards baseline at a 6-month follow-up. Hampton et al. [26] evaluated the impact of a group-based couple workshop which focussed on facilitating sexual behaviour change and adjustment. This intervention showed promising results in improving sexual function and sexual interest for the patient and partner [26].

A symptom management and clinical protocol-based intervention delivered by an advanced practice nurse [28] showed worrying results. This intervention showed no significant impact across depression scores, sexual function and marital interaction for the male patients. However, the data indicated significantly higher levels of sexual function distress and marital interaction distress in partners as a result of participating in the intervention. The authors postulated that these findings could reflect the emotionally difficult material discussed as part of the intervention. The authors indicated that the nurse providing the intervention was guided by the SNIP protocol to initiate a discussion of the psychosexual concerns of the couple and provide an education booklet about common sexual concerns post-treatment. The authors did not indicate any active intervention to facilitate adjustment or change within the couple in regards to these psychosexual concerns. The provision of the booklet and the discussion with the nurse may not have been adequate or appropriate in terms of the management of these concerns and hence the significant increase in distress experienced by the partner as a result of this intervention.

Discussion

This review aimed to explore the published psychosocial interventions aimed at supporting partners of prostate cancer patients. Only 11 studies were identified where measurable outcomes for partners were reported. The effectiveness of the reviewed studies was variable with wide variation in design and quality of methodology. This discussion will summarise the main findings of the studies, address some observed limitations, examine currently ongoing interventions and propose some suggestions for future intervention studies based on what has been learnt from the studies reviewed.

The majority of interventions (seven) were delivered by qualified psychologists, counsellors or therapists [16, 25, 26, 29, 31, 33, 34]. Of the two interventions delivered by nurses [28, 32], one resulted in partners citing a reduction over time in depressive symptoms [32] and the other led to partners in the intervention arm reporting higher levels of distress than partners in the control group [28]. The authors of this study indicate that emotionally difficult topics such as psychosexual and marital communication discussed during the intervention may have caused this higher level of distress. Although this may be the case, the data presented indicates that the intervention may not have been appropriate for addressing these topics. The SNIP protocol discussed in the paper outlines the focus of each of the consultations over the intervention period, and very limited detail is provided to support the nurse to discuss the psychological or psychosexual topics, and there is no detail about the nurses receiving specialist training to support them in delivering this aspect of the intervention.

This study highlights the importance of identifying appropriate and adequate levels of training and expertise amongst those delivering interventions around these complex psychosocial processes and to facilitate patient adjustment.

All six interventions which focussed on reduction of distress [16, 25, 29, 31, 32, 34] yielded modest findings. All showed some benefit to partners in reducing their cancer-related distress and improving their emotional well-being. Interestingly, psycho-education-based interventions [31, 32] were as effective as some of the more complex cognitive behavioural psychological interventions, indicating that lack of information is a significant contributor to psychological distress and the provision of tailored information is effective in reducing distress. Interventions focussing on sexual functioning and intimacy [26–28, 30, 33] showed some positive impact on partners. Cognitive behavioural-based interventions appeared to show more promising results in improving sexual intimacy and satisfaction than psycho-educational interventions. Cognitive and behavioural interventions that focussed on exploration of intimacy and included behavioural management strategies appeared to facilitate improvements in relationship satisfaction and sexual satisfaction, particularly for those who may have been experiencing heightened relationship distress or sexual dissatisfaction prior to commencing the intervention. This may relate to partners' heightened appreciation for the overall quality of the relationship and its importance for the general well-being and a need to enhance intimacy post-prostate cancer treatment [36].

It is also noteworthy that most of the couple-based interventions showed some benefits for both the patient and the partner, suggesting that addressing the needs of both members of the couple may contribute an additional benefit for each individual. However, the one intervention [16] which only included partners showed promising outcomes in terms of partner post-traumatic growth, reductions in use of denial and increased use of positive reappraisal. From a patient perspective, the inclusion of the partner in the intervention evaluated by Canada et al. [33] did not make any significant difference in terms of patient distress or sexual satisfaction. No such study has been conducted exploring the impact of including the patient in the intervention on partner distress or sexual relationship satisfaction. It is evident that the benefit of a couple-focussed intervention versus individual-focussed intervention on partner emotional state and sexual intimacy requires further exploration in order to determine the most efficacious approach.

The modality in which the intervention is delivered could also play an important role in the outcomes of partners. Two of the reviewed studies used the telephone as the mode of delivery [31, 34]. A previous study offering psychotherapy to cancer patients over the telephone found that patients concentrated better and felt more able to speak about more personal and intimate matters over the telephone, as compared to face-

to-face intervention delivery [37]. However, the studies included in the current review appear to show that face-to-face contact with the moderator of the intervention [16, 29, 33] or face-to-face contact coupled with telephone sessions [32] produced a more beneficial result than an intervention delivered solely over the telephone [34]. It should also be noted that Chambers et al. [38] are currently conducting a study examining the efficacy of a couple-based sexuality intervention for couples affected by prostate cancer delivered using the telephone. The findings of this study have not been published to date. Group-based interventions also show promising results [16, 26, 30] in reducing emotional distress and improving sexual intimacy. The group setting could provide a cost-effective method of delivery as well as a unique opportunity for men and partners to share experiences in a way in which normalisation and reduction in isolation might be experienced.

Adherence rates to the interventions were variable across the studies that offered more than one intervention point but were predominantly good and ranged from 61 % [33] to 93 % [31]. Canada et al. [33] explored the reasons for withdrawal and found that the majority of couples who withdrew did so because of high marital distress and an inability to focus on a specific sexual intervention. Interestingly they also found that the couples who withdrew were more likely to have a larger age disparity between the patient and partner (the man in couples who dropped out were on average 6.3 years older than their partner). Across the interventions reviewed, there was no adherence trend identified based on modality of intervention delivery. It may be that participant motivation and self-efficacy and belief in effecting change may be influential in the efficacy of these interventions as overall, all interventions reported good adherence rates. Participant recruitment rates were not reported by all studies, but for those that did it appears that there may be some self-selection bias in terms of those who volunteered to participate indicating that motivation and self-efficacy may play a role.

There are a number of limitations that can be observed throughout these studies. The majority of the studies may be best described as preliminary or pilot studies; therefore, large controlled trials are required. Participants of all but one study were mainly middle to upper socioeconomic class, Caucasian and reported moderate to high levels of education. No study identified or discussed the unique experiences of male partners in a homosexual relationship. Stage of disease was also not a large focus of the studies reviewed. Most studies recruited a range of disease stages and treatment modalities, and this may have confounded the impact of the interventions. Of the studies that did target specific groups based on stage of disease, three were focussed on localised disease [25, 26, 30] and one on men who were commencing androgen deprivation therapy [27]. These interventions utilised tailored information and educational material for participants' stage of disease, but

the focus of these interventions were comparable to the remainder of the interventions reviewed in that they still focussed on emotional state or sexual intimacy. It appears that these two areas are broadly applicable to any stage of disease, but the way in which these areas are targeted in a psychosocial intervention may need to be tailored to the needs of the participant's stage of disease. Overall, despite clear evidence that partners of men with prostate cancer experience difficulties associated with the impact of prostate cancer, there is limited research that has investigated the efficacy of psychosocial interventions for these partners. Nevertheless, from the reviewed studies, it is evident that interventions targeting the reduction of emotional distress, improved communication between the couple and improved sexual intimacy through the utilisation of strategies enabling partners to express their distress, learn new strategies and implement behavioural change show promising results in enhancing partner well-being. Whilst further research evidence is required with larger, better controlled study methodologies, the studies included in this review indicate that psycho-educational interventions and cognitive behavioural interventions show promising results in improving the emotional well-being of patients and their partners. Better outcomes in improvements in sexual intimacy appear to be associated more strongly with cognitive behavioural interventions targeting the couple and utilising behavioural change strategies. Whilst emotional well-being and sexual intimacy are quite likely to be interrelated, further research is required to determine the most effective intervention in improving both aspects for the couple.

Conflict of interest The authors have no conflicts of interest to declare.

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