

Nursing intervention strategies and outcome measures for sexual health in patients with prostate cancer: a scoping review protocol

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Abstract

Introduction

Prostate cancer and its treatments can affect multiple dimensions of sexual health, extending beyond erectile function to sexual desire, orgasm, sexual satisfaction, body image, intimacy and relational well-being. Nurses are well positioned to assess these concerns and provide continuing educational, rehabilitative, psychological and relationship support. However, nursing intervention strategies and their outcome measures remain heterogeneous and have not been comprehensively mapped. This scoping review aims to identify, describe and map nursing intervention strategies for sexual health among men with prostate cancer and the outcome measures used to evaluate them.

Methods and analysis

The primary research question is: What nursing intervention strategies for sexual health among men with prostate cancer have been reported, and how have their outcomes been measured? The review will follow the Joanna Briggs Institute methodology for scoping reviews, with eligibility criteria defined using the Participants, Concept and Context framework. Randomised controlled trials, non-randomised controlled studies and eligible intervention protocols with an identifiable nursing component will be considered. PubMed, Embase, CINAHL, PsycINFO, Web of Science Core Collection and CENTRAL will be searched from inception to the final search date without language restrictions. Reference-list screening and forward citation searching will supplement database searches. Two reviewers will independently screen sources and extract data using a pilot-tested form, with disagreements resolved through discussion or consultation with a third reviewer. Intervention strategies, outcome domains and measurement instruments will be systematically coded, classified and summarised using tables, charts and narrative synthesis. No formal risk-of-bias assessment will be conducted.

Ethics and dissemination

This review will use information exclusively from publicly available literature and will not involve human participants, personal data or biological specimens; therefore, ethics approval and informed consent are not required. Findings will be disseminated through publication in an international peer-reviewed open-access journal and presentation at conferences.

Clinical trial number: Not applicable.

Introduction

Prostate cancer remains a major global health concern. In 2024, approximately 1.55 million new cases and 420,000 deaths were estimated worldwide, making it the second most frequently diagnosed cancer and the fourth leading cause of cancer death among men [1]. As many patients live for years after diagnosis and treatment, prostate cancer care increasingly extends beyond tumor control and survival. Persistent treatment-related effects may continue for more than a decade and adversely affect physical

functioning and quality of life [2–4]. Contemporary care therefore requires sustained attention to symptom management, functional recovery and psychosocial well-being throughout survivorship. Within this broader agenda, sexual health represents an important component of person-centred supportive care and warrants systematic attention across the disease trajectory [5].

Sexual consequences following prostate cancer treatment are heterogeneous and extend beyond erectile dysfunction. Radical prostatectomy may impair erectile function through neurovascular injury and can also result in anejaculation, altered or painful orgasm, climacteric, and changes in penile length or curvature [6]. Radiotherapy is associated with a more gradual decline in erectile function and may likewise affect ejaculation and orgasm, whereas androgen deprivation therapy commonly reduces sexual desire, erectile capacity, and sexual activity through testosterone suppression [7]. Long-term evidence from the ProtecT trial demonstrates that these effects may persist: at 7 years, erections sufficient for intercourse were reported by 18% of men assigned to prostatectomy, compared with 27% after radiotherapy and 30% under active monitoring, although sexual function declined across all groups by year 12 [2]. These physical changes may interact with urinary symptoms, altered body image, threatened masculinity, emotional distress, and changes in intimacy and partner communication [8]. Consequently, patients and partners may need to redefine sexual expression and negotiate expectations during survivorship. The pattern and meaning of these changes vary according to baseline sexual function, age, comorbidities, treatment modality, relationship context, and personal priorities [9–11]. An exclusive focus on erectile restoration is therefore unlikely to capture the full scope of patients' sexual health needs. Support should address physical function alongside psychological adjustment, relational intimacy, communication, and information needs before, during, and after treatment.

Because sexual health concerns are multidimensional and may persist from diagnosis through treatment and survivorship, men with prostate cancer often require continuing informational, psychological, behavioural, and relationship support [12]. Nurses are well positioned to identify concerns, initiate sensitive discussions, assess needs, and coordinate care across the disease trajectory [13]. Nursing strategies may include sexual health assessment, structured psychoeducation and psychosexual counselling, symptom management, pelvic floor and exercise programmes, support for erectile aids and penile rehabilitation, self-management guidance, partner communication, follow-up, and specialist referral [14]. These strategies can be delivered face to face, by telephone, or through digital platforms, either individually, with partners, or within multidisciplinary teams. Evidence indicates that nurse-led behavioural interventions and psychoeducational can achieve modest improvements in sexual function and satisfaction, while dyadic approaches may support coping and selected partner outcomes [15]. Their structured implementation may therefore improve the accessibility, continuity, and individualization of sexual health care.

Existing studies have investigated education, counselling, couple-based support, digital health, rehabilitation, and self-management strategies, but their components, delivery modes, duration, theoretical foundations, and partner involvement vary considerably [12, 13, 15]. Outcome measurement is also inconsistent: studies use different domains, instruments, and follow-up points, often emphasising

erectile function while less consistently assessing sexual distress, satisfaction, body image, intimacy, communication, self-efficacy, and partner outcomes [16–18]. Moreover, the relationship between intervention content and selected outcomes has not been systematically mapped. To our knowledge, none has jointly mapped nursing intervention strategies and the outcome measures used for sexual health among men with prostate cancer. A scoping review is appropriate for organizing this broad and heterogeneous evidence [19]. Accordingly, this scoping review aims to map the available evidence on nursing intervention strategies and outcome measurement for sexual health among men with prostate cancer.

Objective

This scoping review aims to identify, describe, and map global evidence on nursing intervention strategies for sexual health among men with prostate cancer and the outcome measures used to evaluate these strategies, providing evidence to inform nursing practice, intervention development, and outcome selection.

Review question

The main research question guiding this scoping review is: What nursing intervention strategies for sexual health among men with prostate cancer have been reported, and how have their outcomes been measured? The following sub-questions will be addressed:

- (1) What types and components of nursing intervention strategies have been reported?
- (2) What outcome measurement instruments have been used to evaluate these strategies?
- (3) What gaps remain in intervention strategies and outcome measurement?

Eligibility criteria

In line with the Joanna Briggs Institute (JBI) methodology for scoping reviews, the Participants, Concept, and Context (PCC) framework is utilized to establish well defined objectives and determine appropriate inclusion criteria [20]. The eligibility criteria developed according to the PCC framework are presented in Table 1.

Table 1
Population-Concept-Context framework for determining eligibility

PCC Element	Description
Participants	Adult men aged ≥ 18 years diagnosed with prostate cancer, regardless of disease stage, treatment status or survivorship phase.
Concept	Nursing intervention strategies addressing sexual health and the outcome domains and measurement instruments used or planned to evaluate these strategies. Interventions must have an identifiable nursing component.
Context	Any healthcare, community, home-based or digital setting across the prostate cancer care pathway, without geographical or cultural restrictions.

Exclusion criteria

Sources will be excluded if they: (1) include mixed cancer populations without separately extractable data for men with prostate cancer; (2) focus solely on the prevalence, determinants, experiences or help-seeking aspects of sexual health concerns without examining an intervention; (3) evaluate exclusively surgical, pharmacological or device-based treatments without an identifiable nursing component; or (4) examine general supportive care without an explicit sexual health component. Editorials, commentaries, letters and conference abstracts with insufficient information will also be excluded. Secondary reviews will not be included as sources of evidence; however, their reference lists will be screened to identify potentially eligible primary studies.

Types of sources

In alignment with the aim of this review, three types of published sources will be considered: randomised controlled trials, non-randomised controlled studies, and protocols of intervention studies that meet the eligibility criteria. All sources must describe a nursing intervention addressing sexual health among men with prostate cancer and provide sufficient information on the intervention strategy and its reported or prespecified outcome measurement.

Methods

The methodological plan was developed to ensure alignment between the review questions and all subsequent procedures. This protocol follows the updated JBI methodology for scoping reviews and current best-practice guidance for developing scoping review protocols [21]. The completed review will be reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [22]. A scoping review was selected because the available evidence encompasses diverse nursing intervention strategies and outcome measurement approaches. This method enables systematic mapping of intervention strategies and measurement

instruments and identification of evidence gaps without requiring the studies to be sufficiently homogeneous for effect pooling. This protocol has been registered with the Open Science Framework (OSF) (Registration URL: <https://osf.io/5ezsa>). This protocol is not an update or amendment of a previous protocol. Any important amendments will be documented and reported in the final review.

Search strategy

The search will follow the JBI three-step approach summarised in Table 2. All databases will be searched from inception to the final search date, and the exact date and number of records retrieved from each database will be documented. No language restrictions will be applied. Non-English records will initially be assessed using translation software, and potentially eligible full texts will be translated by bilingual researchers or with professional translation support. The searches will be updated before the final evidence synthesis. The complete database-specific search strategies are provided in Supplementary Material 1.

Table 2
JBI three-step search strategy for this scoping review

Step	Search activity	Description
Step 1	Initial limited search	Search PubMed and CINAHL to identify relevant articles and analyse the text words and index terms used to describe them.
Step 2	Comprehensive database search	Use all identified keywords and index terms to search PubMed, Embase, CINAHL, PsycINFO, Web of Science Core Collection and CENTRAL, with the strategy adapted for each database.
Step 3	Supplementary searching	Screen the reference lists of included studies and conduct forward citation searching to identify additional eligible sources.

Study selection

All records identified through database and supplementary searches will be imported into EndNote X9 for reference management and duplicate removal. Following deduplication, two reviewers will independently undertake a two-stage selection process. First, titles and abstracts will be screened against the predefined eligibility criteria. The full texts of potentially eligible reports will then be retrieved and independently assessed by both reviewers. Reasons for excluding reports at the full-text stage will be documented. Disagreements at either stage will be resolved through discussion or, when consensus cannot be reached, consultation with a third reviewer. Multiple reports arising from the same study will be identified, linked and treated as a single study. The study selection process will be documented using the PRISMA 2020 flow diagram as shown in Fig. 1.

Data extraction

A structured data extraction form will be developed in accordance with the review questions and the PCC framework. The proposed form is presented in Table 3. Two reviewers will independently extract data from each included source. Before formal data extraction, the form will be pilot-tested on a small sample of eligible sources and refined through discussion within the review team. Any disagreements will be resolved through discussion or consultation with a third reviewer. Study authors will be contacted when relevant information is missing or unclear. When multiple reports relate to the same study, information will be collated and extracted at the study level. For intervention protocols, planned intervention strategies and prespecified outcome measurement will be extracted, while unavailable results will be recorded as not applicable.

Table 3
Proposed data extraction form

Data item	Information to be extracted
Publication details	First author, year of publication and country
Study characteristics	Study design, care setting, sample size and source type
Participant characteristics	Age, prostate cancer stage, treatment modality or status, and partner involvement
Intervention strategy	Intervention name, aim, content, components and theoretical basis
Delivery characteristics	Nursing role, delivery mode, format, frequency, duration and level of partner participation
Comparator	Usual care, alternative intervention or no comparator
Outcome measurement	Sexual health outcome domains and the names and versions of measurement instruments
Key findings	Findings relevant to the intervention strategy and measured outcomes; not applicable to protocols without results

Quality appraisal

As this review aims to map nursing intervention strategies and outcome measurement, no formal risk-of-bias assessment will be conducted. Study design and source type will be recorded to provide context for the available evidence, and no source will be excluded on the basis of methodological quality.

To categorize and consolidate findings

o organise and synthesise the extracted data, a structured four-stage process will be undertaken in accordance with JBI guidance for scoping reviews:

Identifying core concepts

The review team will first develop a preliminary framework outlining the core concepts relating to nursing intervention strategies and outcome measurement, based on the data extracted from the included

sources. Two reviewers will independently examine each source to identify distinct intervention components, nursing involvement, outcome domains and measurement instruments while retaining the terminology used by the original authors. The identified concepts will then be compared and discussed by the review team. Any discrepancies will be resolved through consensus or consultation with a third reviewer. This process will establish shared definitions and produce a refined framework for subsequent coding and classification.

Systematic coding and classification

Each included study will be assigned a unique identifier (eg, S1, S2), and the intervention strategies and outcome measurement identified within each study will be assigned sequential codes (eg, I1, I2 and O1, O2). These codes will retain a direct link to their source studies, enabling consistent tracking and comparison across the evidence base. Two reviewers will independently apply the coding framework and group conceptually similar codes into broader categories of intervention strategies, outcome domains and measurement instruments. Completed studies and intervention protocols will be classified separately. The coding framework will be refined iteratively, with all changes documented, and disagreements will be resolved through discussion or consultation with a third reviewer.

Domain mapping

Once coding is complete, similar nursing intervention strategies will be clustered into broader strategy domains, while outcome measures and instruments will be grouped within relevant outcome domains. These may include education and counselling, rehabilitation and self-management support, psychological and relationship support, sexual function, psychosexual well-being, intimacy, and quality of life. The occurrence of each domain and measurement instrument across the included studies will be summarised descriptively to identify the most frequently reported strategies and outcome measures.

Visual and narrative reporting

The synthesised findings will be presented visually and narratively. Tables and charts will summarise the characteristics of the included studies, nursing intervention strategies, outcome domains, and measurement instruments. A narrative summary will describe and contextualise the main findings and evidence gaps in accordance with the review objective and questions.

Discussion

This scoping review will provide a structured overview of nursing intervention strategies for sexual health among men with prostate cancer, together with the outcome domains and measurement instruments used in their evaluation. By organizing these two bodies of evidence, the review will clarify the extent to which existing care focuses on erectile function and whether it also encompasses sexual desire and orgasm, sexual satisfaction or distress, body image, intimacy, partner communication, and relational well-being. Emerging evidence also demonstrates diverse supportive approaches, including nurse-led telehealth survivorship care and exercise incorporating psychosexual education and self-management

support [23, 24]. Mapping these strategies may help nurses recognise available approaches across the prostate cancer care pathway and provide support that considers physical, psychological, and relational needs. Organizing the reported outcome domains and instruments may also support more comprehensive and transparent outcome selection in future studies. Rather than determining comparative effectiveness, this review will identify prevailing approaches, variations, and underrepresented areas to inform future intervention development, outcome measurement, and research reporting.

Limitation

As a scoping review, this study will not conduct a formal risk-of-bias assessment, which may affect the interpretation of the findings. Relevant multidisciplinary interventions may be overlooked or incompletely characterised when the nursing contribution is not clearly reported. Although no language restrictions will be applied, sources that cannot be translated by the research team will be excluded, potentially introducing language bias. Grey literature searches may also fail to identify all unpublished or ongoing studies.

Declarations

Author contributions

1.Xiaoting Wang: Conceptualization, Methodology, Project Administration, Writing-Original Draft. 2. Yuan Chen: Investigation, Resources, Visualization, Writing-Review and Editing. 3. Lei Li: Methodology, Validation, Supervision, Writing-Review and Editing. All authors have read and approved the final version of the article.

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Data Availability

No datasets were generated or analysed for this protocol. Data generated during the completed review will be reported in the final publication and its supplementary materials.

Ethics approval and consent to participate

As this scoping review will use data obtained exclusively from publicly available literature and will not involve human participants, personal data or biological specimens, ethics approval and informed consent to participate are not required.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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Figures

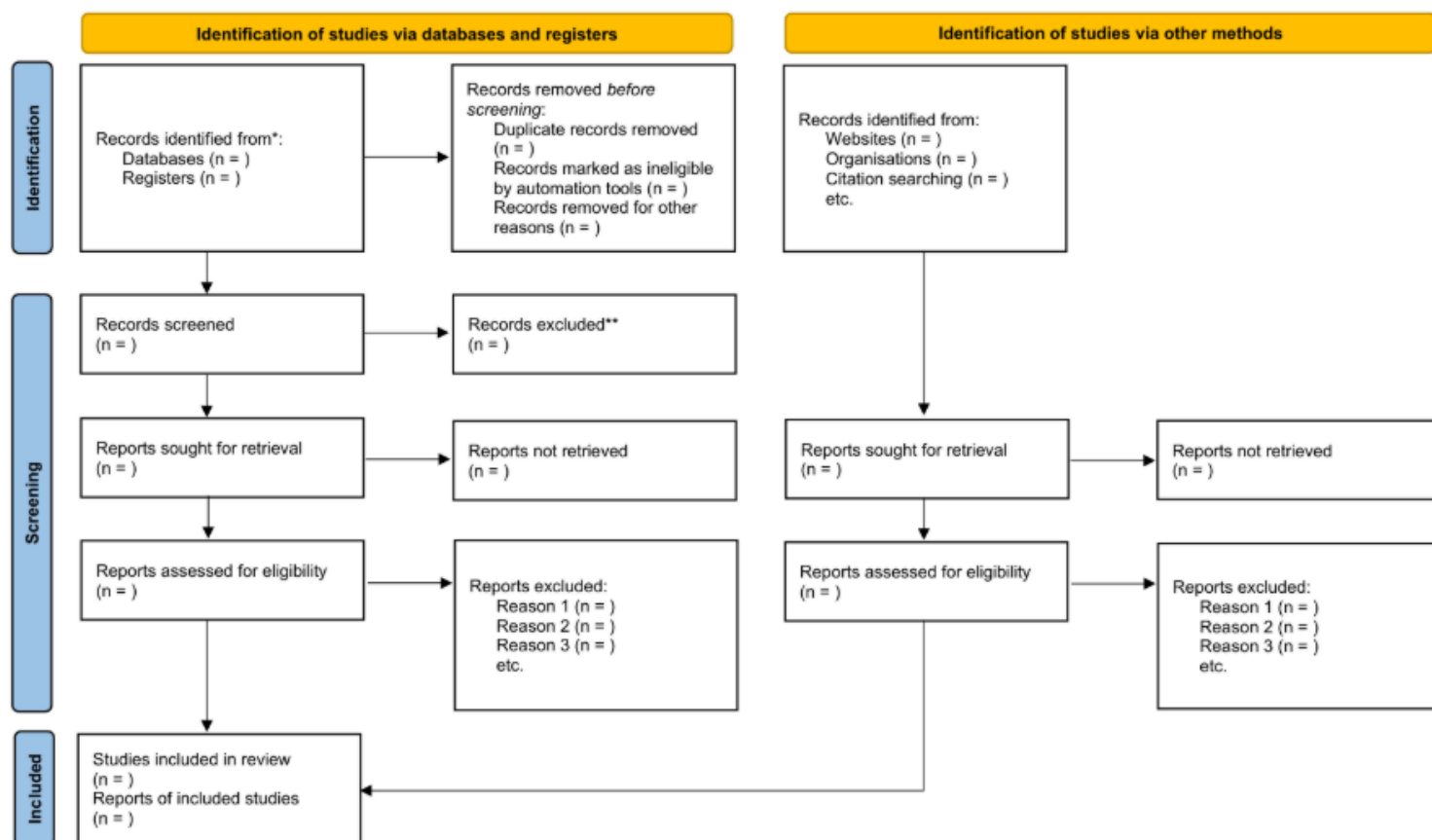


Figure 1

PRISMA 2020 flow diagram for the selection of sources of evidence

Supplementary Files

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- [SupplementaryMaterial1.pdf](#)