



Research Article

Impact of Women's Sexual Health on Prostate Cancer Risk in Men

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Abstract

Introduction: Prostate cancer is a significant health issue for men. This study investigates whether women's sexual health and relationship satisfaction influence prostate cancer risk in their male partners.

Methods: We conducted a prospective cohort study involving 1,000 heterosexual couples where the male partner was over 40 years old. Couples in stable relationships with no prior history of prostate cancer were included. Baseline data included demographic information, medical history, lifestyle factors, the Female Sexual Function Index (FSFI) and the Dyadic Adjustment Scale (DAS) to assess women's sexual health and relationship satisfaction. Sexual activity frequency was also recorded. Participants were followed annually for 10 years to track prostate cancer incidence in men. We used Pearson correlation and multivariate Cox proportional hazards regression for statistical analysis.

Results: We found a significant negative correlation between FSFI scores and prostate cancer incidence ($r = -0.42$, $p < 0.05$). Higher DAS scores and more frequent sexual activity were also associated with a reduced risk of prostate cancer ($r = -0.35$ and $r = -0.38$, respectively, both $p < 0.05$). These results suggest that better sexual function and relationship satisfaction in women are linked to a lower risk of prostate cancer in their male partners.

Conclusion: Women's positive sexual health and relationship satisfaction may reduce prostate cancer risk in men. These findings underscore the importance of considering partner dynamics in prostate cancer prevention strategies and encourage further research into underlying mechanisms.

Keywords: Prostate Cancer; Sexual Activity; Male; Female

Introduction

Prostate cancer is one of the most prevalent cancers affecting men worldwide, representing a significant public health challenge due to its high incidence and associated morbidity. Despite extensive research on prostate cancer, many of its risk factors remain poorly understood. Traditional risk factors such as age, genetic predisposition, dietary habits and lifestyle choices have been extensively studied; however, the potential influence of psychosocial and relational dynamics, particularly women's sexual health, on prostate cancer risk in men has not been thoroughly investigated.

Women's sexual health encompasses a wide range of factors including sexual function, satisfaction and overall well-being, which are integral components of intimate relationships. It is well-established that relational and sexual satisfaction can significantly impact psychological and physical health outcomes for both partners in a relationship. However, the indirect effects of women's sexual health on their male partners, specifically regarding prostate cancer risk, remain largely unexplored.

This study hypothesizes that poor sexual health in women may be associated with an increased risk of prostate cancer in their male partners. Several potential pathways could explain this relationship, including the frequency and quality of sexual activity, overall relationship satisfaction and levels of psychological stress experienced by men. Sexual activity, for instance, has been

shown to influence prostate health, with some studies suggesting that frequent ejaculation may reduce prostate cancer risk. Additionally, relational satisfaction and reduced stress levels are known to contribute to better immune function and overall health, potentially influencing cancer risk.

Understanding the connection between women's sexual health and prostate cancer risk in men is crucial for developing comprehensive cancer prevention strategies that encompass not only individual lifestyle factors but also relational and psychosocial dynamics. This study aims to explore this association through a detailed examination of sexual health, relationship satisfaction and psychological stress, providing new insights into the holistic factors contributing to prostate cancer risk.

The objectives of this research are twofold: first, to investigate the potential association between women's sexual health and the risk of prostate cancer in their male partners; and second, to identify the behavioral, psychological and biological mediators of this relationship. We hypothesize that poor sexual health in women will be associated with an increased risk of prostate cancer in men, mediated by factors such as reduced sexual activity, lower relationship satisfaction and higher psychological stress.

In addressing these objectives, this study seeks to fill a significant gap in the existing literature and to contribute to a more nuanced understanding of the interplay between relational health and cancer risk. The findings could have important implications for public health strategies and clinical practices, emphasizing the need for holistic approaches in cancer prevention and health promotion.

Aim and Objectives

Aim of this study is to evaluate impact of women's sexual health on prostate cancer risk in men.

Methodology

Study Design

This research was designed as a prospective cohort study to examine the impact of women's sexual health on the risk of prostate cancer in men. A prospective cohort study design was chosen to establish temporal relationships between exposure (women's sexual health and related factors) and outcome (incidence of prostate cancer in men).

Participants

Recruitment

- The study recruited heterosexual couples where the male partner was over 40 years old
- Couples were sourced through community advertisements, healthcare facilities and social media platforms

Inclusion Criteria

- Couples in stable relationships (defined as being in a relationship for at least five years)
- No prior history of prostate cancer in men
- Willingness to participate in baseline and follow-up assessments

Exclusion Criteria

- Men with a history of prostate cancer or other severe chronic illnesses
- Women with conditions severely impacting sexual function or relationship dynamics (e.g., severe psychiatric disorders)
- Couples not willing to adhere to the follow-up protocol

Data Collection

Baseline Assessment

- Demographic Information: Age, ethnicity, education level, occupation and income
- Medical History: Personal and family history of diseases, especially cancer
- Lifestyle Factors: Smoking status, alcohol consumption, physical activity levels and dietary habits

Quiz

- Female Sexual Function Index (FSFI): A detailed 19-item questionnaire assessing various domains of sexual function, including desire, arousal, lubrication, orgasm, satisfaction and pain
- Dyadic Adjustment Scale (DAS): A 32-item scale measuring relationship satisfaction across four domains: dyadic consensus, dyadic satisfaction, dyadic cohesion and affectional expression
- Sexual Activity Frequency: Self-reported frequency of sexual activity per month

Follow-Up and Outcome Measurement

Follow-Up Assessments

- Participants were followed up annually for a period of 10 years
- Follow-up assessments included repeating the FSFI, DAS and recording any changes in medical history and lifestyle factors

Outcome Measurement

- The primary outcome was the incidence of prostate cancer in male participants, diagnosed through routine medical exams and confirmed by biopsy if necessary

Statistical Analysis

1. Descriptive Statistics:

- Mean and standard deviation for continuous variables (age, FSFI score, DAS score, frequency of sexual activity)
- Percentages for categorical variables (incidence of prostate cancer)

2. Correlation Analysis:

- Pearson correlation coefficients were calculated to assess the relationship between women's sexual health scores (FSFI), relationship satisfaction (DAS), frequency of sexual activity and the incidence of prostate cancer in men

3. Regression Analysis:

- Multivariate Cox proportional hazards regression models were used to adjust for potential confounders (age, lifestyle factors, medical history) and to estimate the hazard ratios for the risk of prostate cancer associated with FSFI scores, DAS scores and frequency of sexual activity

4. Sensitivity Analyses:

- Conducted to test the robustness of the findings by excluding couples with high-risk factors for prostate cancer (e.g., strong family history) and reanalyzing the data

Ethical Considerations

- Informed Consent: Written informed consent was obtained from all participants after explaining the study's purpose, procedures, risks and benefits
- Confidentiality: Participant information was kept confidential and anonymized for analysis
- Ethical Approval: The study protocol was approved by the Institutional Review Board (IRB) of the conducting institution

Results Interpretation

- Findings were interpreted considering the potential for residual confounding despite adjustments
- The results were discussed in the context of existing literature on the role of sexual health and relationship factors in prostate cancer risk

This research method allowed for a comprehensive and systematic examination of the relationship between women's sexual health and prostate cancer risk in men, providing valuable insights into potential protective factors and areas for further investigation.

Results

Study Design

This research study was designed as a prospective cohort study to investigate the impact of women's sexual health on the risk of prostate cancer in men.

Participants

The study involved the recruitment of heterosexual couples where the male partner was over 40 years old. Couples were required to be in stable relationships, with no prior history of prostate cancer in men and willing to participate in follow-up assessments. A total of 1,000 couples met the inclusion criteria and were enrolled in the study.

Data Collection

Baseline Assessment

Demographic information, medical history and lifestyle factors were collected from all participants. Detailed questionnaires on women's sexual health, including the Female Sexual Function Index (FSFI) and relationship satisfaction using the Dyadic Adjustment Scale (DAS) were administered. The frequency of sexual activity was also recorded (Table 1,2).

Summary of Findings

Characteristic	Mean (SD) or percentage (%)
Age of male participants(years)	55.3 (7.6)
Age of female participants(years)	52.1 (6.9)
Duration of relationship(years)	24.5 (8.2)
FSFI Score	25.8 (4.9)
DAS Score	105.4 (14.2)
Frequency of sexual activity (per month)	6.8 (2.4)

Table 1: Baseline characteristics and sexual health scores.

Variable	Incidence of Prostate Cancer (%)	Correlation Coefficient (r)
FSFI Score	5.6	-0.42
DAS Score	4.9	-0.35
Frequency of sexual activity	6.1	-0.38

Table 2: Incidence of prostate cancer and correlation with sexual health variables.

Note: $p < 0.05$

Interpretation of Findings

Demographic Characteristics

The mean age of male participants was 55.3 years, while the mean age of female participants was 52.1 years. The average duration of relationships among couples was approximately 24.5 years.

Sexual Health and Relationship Satisfaction

The mean FSFI score among female participants was 25.8, indicating a moderate level of sexual function. The DAS score, reflecting relationship satisfaction, averaged 105.4. Couples reported an average frequency of sexual activity of 6.8 times per month.

Incidence of Prostate Cancer

The overall incidence of prostate cancer in the cohort was observed at 5.6%.

Correlation Analysis

- A significant negative correlation was found between women's sexual health (as measured by the FSFI) and the incidence of prostate cancer in men ($r = -0.42$, $p < 0.05$). This suggests that better sexual function in women is associated with a lower risk of prostate cancer in their male partners
- Relationship satisfaction (DAS score) was also negatively correlated with prostate cancer incidence ($r = -0.35$, $p < 0.05$), indicating that higher relationship satisfaction is associated with a reduced risk of prostate cancer
- The frequency of sexual activity showed a negative correlation with prostate cancer incidence ($r = -0.38$, $p < 0.05$), suggesting that more frequent sexual activity is associated with a lower risk of prostate cancer in men

These findings highlight the potential protective effects of positive sexual health and relationship satisfaction on the risk of prostate cancer in men. Further research is warranted to explore the underlying mechanisms and to confirm these associations in larger, diverse populations.

Discussion

Principal Findings

This prospective cohort study explored the impact of women's sexual health on the risk of prostate cancer in men, revealing several important findings. We observed a significant negative correlation between women's sexual function (measured by the FSFI) and the incidence of prostate cancer in their male partners. Additionally, higher relationship satisfaction (DAS scores) and more frequent sexual activity were associated with a reduced risk of prostate cancer. These results suggest that positive sexual health and relationship dynamics may have protective effects against prostate cancer in men.

Comparison with Previous Studies

The relationship between sexual activity and prostate cancer risk has been a topic of interest in previous research, although the focus has typically been on men's sexual behavior. Our study is unique in its emphasis on women's sexual health and how it might influence prostate cancer risk in their male partners. Earlier studies have suggested that frequent ejaculation may lower the risk of prostate cancer due to the removal of potential carcinogens through semen. Our findings support the idea that sexual activity, facilitated by a partner's sexual health, may be beneficial. Moreover, relationship satisfaction has not been extensively studied in this context and our results highlight its potential importance.

Potential Mechanisms

Several mechanisms could explain the protective effects observed. One hypothesis is that frequent sexual activity reduces the build-up of carcinogenic substances in the prostate. Good sexual health and relationship satisfaction may also reduce stress and improve overall mental health, which could in turn positively influence immune function and lower cancer risk. Additionally, positive sexual experiences may be linked to healthier lifestyle choices and better overall health, contributing to a lower risk of cancer.

Strengths and Limitations

Strengths

1. *Prospective Cohort Design:* This design allows for the establishment of temporal relationships between women's sexual health and prostate cancer risk
2. *Comprehensive Data Collection:* Detailed baseline and follow-up assessments provided a rich dataset for analysis, including validated questionnaires (FSFI and DAS)
3. *Large Sample Size:* The study involved 1,000 couples, enhancing the generalizability of the findings

Limitations

1. *Self-Reported Data:* Sexual health and activity frequency were self-reported, which might introduce recall bias or social desirability bias
2. *Single Geographic Location:* The study was conducted in a specific region, which may limit the applicability of the results to other populations
3. *Potential Residual Confounding:* Despite adjustments for various factors, there may still be unmeasured confounders influencing the results

Clinical and Public Health Implications

The findings of this study have several important implications. Clinicians should consider the potential role of sexual health and relationship factors when discussing prostate cancer risk with patients. Interventions aimed at improving sexual health and relationship satisfaction could be beneficial not only for general well-being but also potentially for reducing cancer risk. Public health initiatives that promote healthy relationships and sexual well-being might also contribute to lowering the incidence of prostate cancer.

Future Research Directions

Future studies should aim to replicate these findings in diverse populations to enhance generalizability. Longitudinal studies with more frequent assessments could provide deeper insights into the temporal dynamics between sexual health and prostate cancer risk. Additionally, exploring the biological mechanisms underlying these associations through biomarker studies could offer more concrete evidence of causality. Investigating the impact of interventions aimed at improving sexual health on prostate cancer risk could also be a valuable area of research.

Conclusion

This study provides novel insights into the potential protective effects of women's sexual health and relationship satisfaction on prostate cancer risk in men. The significant correlations observed underscore the importance of considering partner dynamics in cancer prevention strategies. By fostering positive sexual health and relationship satisfaction, we may find new avenues to reduce the burden of prostate cancer.

Conflict of Interests

The authors have no conflict of interest to declare related to this article.

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