Evidence for Masturbation and Prostate Cancer Risk: Do We Have a Verdict?

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ABSTRACT

Introduction: Prostate cancer (PCa) is one of the leading causes of cancer death in men and remains one of the most diagnosed malignancies worldwide. Ongoing public health efforts continue to promote protective factors, such as diet, physical activity, and other lifestyle modifications, against PCa development. Masturbation is a nearly universal safe sexual activity that transcends societal boundaries and geography yet continues to be met with stigma and controversy in contemporary society. Although previous studies have examined associations between sexual activity and PCa risk, anecdotal relations have been suggested regarding masturbation practice and PCa risk.

Aim: To provide a summary of the published literature and examine the contemporary evidence for relations between masturbation practice and PCa risk.

Methods: A survey of the current literature using seven academic electronic databases was conducted using search terms and key words associated with masturbation practice and PCa risk.

Main Outcome Measures: The practice of masturbation and its relation to PCa risk.

Results: The literature search identified study samples (n = 16) published before October 2015. Sample inclusions varied by study type, sample size, and primary objective. Protective relations (n = 7) between ejaculation through masturbation and PCa risk were reported by 44% of the study sample. Age range emerged as a significant variable in the relation between masturbation and PCa.

Conclusion: Findings included relations among masturbation, ejaculation frequency, and age range as individual factors of PCa risk. No universally accepted themes were identified across the study sample. Throughout the sample, there was insufficient agreement in survey design and data reporting. Potential avenues for new research include frequency of ejaculation and age range as covarying factors that could lead to more definitive statements about masturbation practice and PCa risk.

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Key Words: Masturbation; Prostate Cancer Risk; Sexual Activity; Ejaculation

INTRODUCTION

Prostate cancer (PCa), a progressive chronic neoplasm, is among the leading causes of global cancer deaths in men.[1] An estimated 1.1 million cases of PCa were diagnosed and 307,000 deaths were reported in 2012.[2] Identified for its varied global geographic distribution,[1,3] age-standardized rates in 2012 were found to be highest in Australia and New Zealand, North America, and Western and Northern Europe (~112, 97, 95, and 85 per 100,000, respectively) owing mainly to the extensive practice of prostate-specific antigen screening and biopsy examination in those regions, and low in Eastern and South-Central Asia (~11 and 5 per 100,000 respectively).[2] PCa was among the most common non-skin cancers, representing more than 13% (~221,000 estimated new cases) of all new cancer cases in the United States in 2015[4,5] and the second most common cause of cancer deaths in men (~42,000 estimated new cases), after lung cancer, in the United Kingdom in 2011.[6] The global incidence of PCa has led ongoing efforts to focus on preventive strategies to decrease the economic and public health burden of the disease.[7] Currently, some risk factors for PCa have been firmly established and include older age,[8] race and ethnicity,[9] and a family history of the disease.[10] Continued public health

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efforts, such as prostate-specific antigen screening,[11] nutrition and dietary patterns,[12,13] physical activity,[14] and other lifestyle and behavior modifications,[15] continue to serve as protective factors against PCa development. Other risk factors suggested in the literature include obesity,[16] occupational exposures,[17] sexually transmitted infections (STIs),[18] practice of male circumcision,[19] vasectomy,[20] multiple sexual partners, and sexual activity.[21]

Masturbation is a common sexual activity that continues to be met with apprehension and has been misunderstood and mislabeled by societies since ancient times.[22,23] Contrary to progressive health standards and healthy sexual development,[24–26] some studies continue to suggest masturbation is a spiritual, ethical, mental, and physical health threat to society.[27,28] Masturbation has become a research topic of growing interest as it relates to physical, mental, and public health wellness.[25,29,30] From a public health perspective, masturbation is considered a safe sexual activity and preventive approach similar to condom use, partner limitation, male circumcision, and abstinence, which carry no risk of pregnancy or STIs. Masturbation has been suggested to have potential benefits to emotional and sexual health.[31,32]

The common and nearly universal prevalence of masturbation continues to be well documented in several studies,[29,31,33–35] suggesting masturbation is an integral sexual practice that is part of the dynamics of sexual development, particularly during adolescence. A stratified sample survey (n = 11,161) of the general British population 16 to 44 years of age found that 73% and 36.8% of men and women, respectively, reported masturbating in the 4 weeks before the study.[29] Similarly, a cross-sectional survey (n = 820) in the United States found that, across age groups, more men (73.8%) reported masturbating than women (48.1%), with masturbation occurrences increasing with age in men.[31]

AIMS

Although previous studies have examined associations between sexual activity and PCa risk,[21,36,37] no specific review has examined the current literature and evidence linking masturbation practice and PCa risk.

METHODS

A survey of the literature before October 2015 was carried out to examine the association between masturbation practice and PCa risk. Relevant articles were identified by applying search strategies to seven academic electronic databases—PubMed, Scopus, EBSCOhost, SpringerLink, Taylor & Francis Online, Wiley Online, and ScienceDirect—using a combination of search terms and key words: *masturbation* and *prostatic carcinoma* or *prostate cancer risk.* All retrieved titles, abstracts, and full-text publications were reviewed and screened for relevance to the topic.

Inclusion Criteria

Inclusion criteria for refereed study samples included case-control studies, cohort studies, case reports, case series studies, literature reviews, meta-analyses, conference abstracts, communications, commentaries, editorials, brief reports, position, practice, policy, and hypothesis-generating statements. Furthermore, references from retrieved articles were reviewed and screened to identify additional applicable publications.

Exclusion Criteria

Publications were excluded if study samples described cancer risks other than PCa, benign prostatic hypertrophy, prostatitis, or other prostatic diseases. Non-refereed publications also were excluded. No language or study quality restrictions were imposed.

MAIN OUTCOME MEASURES

Main outcome measures were the practice of masturbation and its relation to PCa risk.

RESULTS

The literature search progressed through three stages of identification and analysis (Figure 1). An analysis of the literature yielded 16 relevant articles published before October 2015 that rendered conclusions about the relation between masturbation and PCa risk (Table 1). Seven articles reported a protective effect linked to masturbation or higher incidence of ejaculation per month and PCa risk. Three articles suggested a causal effect by reporting a moderate or higher correlation between masturbation and PCa risk. Six articles reported no significant relations (protective or causal) between masturbation and PCa risk. No significant trends with respect to population location or study methodology were found. Among articles that reported protective or causal conclusions, age range and type of ejaculation emerged as unintentional yet potentially significant variables.

Of seven sample articles reporting a protective relation between masturbation and PCa risk, four used large samples (n > 100) that yielded methodologically controlled and statistically significant results,[36–39] one used a small sample (n < 100) that yielded methodologically controlled and statistically significant results,[40] and two reviewed large longitudinal studies in comparative analyses. All protective findings were expressed as relations; three of the seven articles reported contradictory findings in their study populations related to controlled variables (eg, age range). Three articles suggested a positive causal relation between masturbation and PCa risk. One article used a small case-control study (n < 100) and two reviewed other articles included in this research sample[36,41] and reported anecdotal positive causal associations with PCa risk.

Age range and ejaculation type were prevalent in articles suggesting a protective or causal effect. Research suggested a