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Original article

Prevalence and correlates of mental health problems in prostate cancer survivors: A case-control study comparing survivors with general population peers

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Abstract

Objective: The purpose of this study was to identify factors associated with mental health (MH) problems in prostate cancer (PC) survivors. Toward this end, we evaluated (1) differences in the prevalence of MH problems between PC survivors and age-matched men from the general population (GenPop) and (2) correlates of MH in PC survivors and the GenPop.

Methods and materials: In this observational case-control study, we age-matched PC survivors ($n = 644$, alive ≥ 5 y after diagnosis of a stage I–IV carcinoma) recruited from Dutch community hospitals (Patient Reported Outcomes Following Initial treatment and Long-term Evaluation of Survivorship registry) with GenPop peers ($n = 644$) selected from a population-based sample recruited in general practices (NIVEL). MH was operationalized using the 5-item Mental Health Inventory of the Short Form Health Survey (SF-36). Potential correlates of MH included sociodemographic characteristics, health-related quality of life scores, and clinical characteristics (PC survivors only). We used analysis of (co)variance and chi-square tests to address the 2 research questions.

Results: We observed clinically relevant MH symptoms in 14% of the PC survivors and 6% of the GenPop controls ($P < 0.01$, odds ratio $= 2.45$ [1.66–3.62]). The most important correlates of lower MH scores in the PC survivors were being widowed, a lower educational level, lower general health perceptions, more bodily pain and urinary bother, and less sexual satisfaction. The most important correlates of lower MH scores in the GenPop were as follows: lower general health perceptions, more role limitations because of physical problems, and more bodily pain.

Conclusions: Our results indicate that long-term PC survivors have poorer MH, as assessed by the 5-item Mental Health Inventory questionnaire, than men of a comparable age from the GenPop without a history of PC. Attention to potentially modifiable factors associated with MH problems in PC survivors, such as urinary function and its related bother, bodily pain, and sexual satisfaction, may help to prevent or limit MH problems in this survivor population.

Keywords: Cancer; Prostate cancer survivors; Mental health; Correlates; General population comparison

1. Introduction

Most prostate cancer (PC) patients will become long-term (≥ 5 y) survivors. However, research into long-term cancer survivorship is still in its infancy [1]. The first studies including long-term PC survivors focused on assessing symptom burden. More recently, there has been increasing interest in the long-term effect of PC and its treatment on mental health (MH) [2]. However, these studies have yielded inconsistent results. Several studies have suggested that PC patients are at increased risk for MH

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problems such as depression, anxiety, and suicide [2–4], but other studies have not observed significant differences in MH outcomes among PC survivors as compared with general population (GenPop) peers without PC [5–7]. Several reviews have called for additional studies to better understand the long-term psychological effects of PC and its treatment [1,2,8].

To provide timely and appropriate care to those who need it most, it is important to identify those survivors who are at high risk for MH problems [9]. In general, previous studies have identified a number of factors associated significantly with MH problems in cancer survivors [10]. However, to our knowledge, only 1 study has investigated such factors in PC survivors [11]. Sharp et al. [11] found that urinary, bowel and androgen deprivation therapy–related symptoms, fatigue, insomnia, and financial difficulties were associated significantly with psychological problems in PC survivors. This study did not, however, include a comparison group from the GenPop.

The current study addressed the following 2 interrelated research questions: (1) Are there differences in the prevalence of MH problems between PC survivors and age-matched men from the GenPop? and (2) What factors are associated significantly with MH problems in PC survivors and the GenPop?

2. Materials and methods

2.1. Sample of PC survivors

Data on the long-term PC survivors (≥5 y postdiagnosis) were retrieved from the Patient Reported Outcomes Following Initial treatment and Long-term Evaluation of Survivorship (PROFILES) registry [5,12]. This registry was established to study the psychosocial and physical effect of cancer and its treatment using a population-based cohort of Dutch cancer survivors. The current analysis was based on data obtained from all patients in the PROFILES database who were diagnosed with PC between 1994 and 1998 and who completed a questionnaire between November 2004 and May 2005. Details of the original data collection have been described previously [5].

2.2. The GenPop sample

To form an age-matched comparison group of men without PC from the GenPop, we obtained data collected by the Netherlands Institute for Health Services Research (NIVEL) in the second Dutch National Survey of General Practice [13], a study monitoring public health and health inequalities in the Netherlands. Men who had a history of PC were excluded from the GenPop sample (men with a history of other cancer types were not excluded). This cohort is representative of the Dutch population of men aged between 55 and 85 years. More details about the NIVEL study are available elsewhere [13].

2.3. Matching

We matched the PC survivors from the PROFILES registry 1:1 with GenPop peers from the NIVEL study using the SPSS "Fuzzy" case-matching algorithm. For each PC case, all eligible GenPop cases were selected according to the matching criterion (age within a 5-y range). The procedure then randomly selected a GenPop case from those who met the matching criterion.

2.4. Study measures

2.4.1. Mental health

As an indicator of MH we used the 5-item Mental Health Inventory (MHI-5) of the 36-item Short Form Health Survey (SF-36) Health Survey [14]. Previous studies comparing the MHI-5 with other validated MH scales and clinical interviews indicate that the MHI-5 is a valid measure of MH symptoms [15,16]. The raw MHI-5 item scores are summed to form a scale score that is linearly converted to a 0 to 100 scale, with 0 representing very poor MH and 100 representing very good MH. We used the cutoff of 52 (or less) proposed by Ware and Kosinski [17] and most commonly used in the literature to define clinically relevant MH symptoms [18].

2.4.2. Variables investigated as potential correlates of MHI-5 scores

2.4.2.1. Sociodemographic characteristics. Sociodemographic data included age, marital status (married, single/divorced, and widowed), educational level (low = no/primary school, medium = secondary school/vocational training, and high = college/university), and current work status (retired, unemployed, and employed) [19,20].

2.4.2.2. Clinical characteristics. Clinical characteristics included Gleason score at diagnosis [2–10]; clinical stage at diagnosis (I = localized, II = early locally advanced, III = locally advanced, and IV = metastasized) [21]; primary treatment (radical prostatectomy, external beam radiotherapy, primary hormonal therapy only , and active surveillance); adjuvant treatment (0 = no and 1 = yes); (adjuvant) hormonal therapy (0 = no and 1 = yes); progression after primary treatment (0 = no, 1 = yes; recurrence, metastases or new primary tumors); years since diagnosis (0 = 5–10 and 1 = 10–20), and number of chronic conditions (NCC) or diseases in the past 12 months (0 = none, 1 = one, and 2 = more than one chronic condition). Only NCC could be included as a potential correlate in the GenPop sample.

2.4.2.3. Health-related quality of life scales. The health-related quality of life (HRQoL) scales included the physical functioning, role limitations owing to physical health problems, bodily pain, and general health perceptions scales of the SF-36 [17], and the urinary functioning, bowel