ORIGINAL RESEARCH—MEN'S SEXUAL HEALTH

The Effect of Comorbidities and Socioeconomic Status on Sexual and Urinary Function in Men Undergoing Prostate Cancer Screening

Naeem Bhojani, MD,*† Paul Perrotte, MD,† Claudio Jeldres, MD,*† Nazareno Suardi, MD,*‡ Georg Hutterer, MD,*§ Shahrokh F. Shariat, MD,¶ and Pierre I. Karakiewicz, MD, FRCSC*†

*Cancer Prognostics and Health Outcomes Unit, University of Montreal, Montreal, Quebec, Canada; †Department of Urology, University of Montreal Health Center (CHUM), Montreal, Canada; ‡Department of Urology, Vita-Salute University San Raffaele, Milan, Italy; §Department of Urology, Graz Medical University, Graz, Austria; ¶Department of Urology, University of Texas Southwestern Medical Center, Dallas, TX, USA

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ABSTRACT

Introduction. Comorbidities and socioeconomic status (SES) represent known confounders of baseline health-related quality of life.

Aim. To assess the effect of comorbidities and of SES variables on urinary function (UF) and sexual function (SF) and on associated bother items.

Methods. A cohort of 1,162 men without an established diagnosis of prostate cancer (PCa) completed questionnaires addressing SES characteristics, the lifetime prevalence of 12 comorbid conditions, SF and UF as well as their associated bother.

Main Outcome Measures. Crude and adjusted logistic regression models tested the association between the predictors, SES and comorbidity, and four separate outcomes, namely SF and UF and their associated bother.

Results. Of all men, aged 40–79 years, 172 (14.8%) reported poor or very poor ability to have an erection, and for 165 (14.2%), erectile function (EF) was a big or moderate problem. Daily or weekly urinary incontinence was reported by 98 (8.4%) men, and for 94 (8.1%) men, UF was a big or moderate problem. One or more comorbidities were present in 437 (37.6%) men. In age- and SES-adjusted analyses, major depression and diabetes had the most detrimental effect on EF (5.8 [$P < 0.001$] and 4.8 [$P < 0.001$], respectively) and on sexual bother (4.3 [$P < 0.001$] and 7.2 [$P < 0.001$], respectively). Stroke (4.7 [$P = 0.004$]) and drug problems (4.8 [$P = 0.002$]) had the most detrimental effect on urinary incontinence. Alcoholism and alcohol-related problems (3.1 [$P = 0.004$]) had the most detrimental effect on the urinary bother scale. Finally, SES only affected urinary incontinence, which was poorer in men who lived with a spouse or partner (2.1 [$P = 0.03$]).

Conclusion. Select comorbidities have very strong effects on UF and EF. Conversely, for most SES variables, the effect was weak and insignificant. In consequence, when patients are assessed for definitive PCa therapy, comorbidities require an adjustment, whereas SES assessment may potentially be omitted, especially if questionnaire brevity is a consideration. **Bhojani N, Perrotte P, Jeldres C, Suardi N, Hutterer G, Shariat SF, and Karakiewicz PI. The effect of comorbidities and socioeconomic status on sexual and urinary function in men undergoing prostate cancer screening. J Sex Med 2008;5:668–676.**

Key Words. Comorbidities; Quality of Life; Sexual Function; Socioeconomic Status; Urinary Function

Introduction

Baseline health-related quality of life (HRQoL) represents an important consideration in men with localized prostate cancer (PCa), as treatment is inevitably related to HRQoL detriments [1–3]. Comorbidities represent known confounders of baseline HRQoL [4–7]. However, the confounding effect of specific comorbidities has not been quantified, especially in men undergoing PCa screening. Similarly, socioeconomic status (SES) may affect PCa-specific HRQoL [8,9]. However, the magnitude and the direction of the effect of SES have not been studied in men without an established PCa diagnosis. To address this void, we examined the association between 12 comorbidities and five SES variables on items quantifying urinary function (UF), urinary bother (UB), erectile function (EF), and sexual bother (SB).

Table 1 Distribution of responses to urinary and sexual function and their associated bother items

	Variable	Total (number [%])
Erectile function: How would you rate your ability to have an erection during the last 4 weeks?	Very poor	66 (5.7)
	Poor	106 (9.1)
	Acceptable	271 (23.3)
	Good	302 (26.0)
	Very good	399 (34.3)
Sexual bother: Overall, how big a problem has your sexual function been for you during the last 4 weeks?	Big problem	71 (6.1)
	Moderate problem	94 (8.1)
	Minor problem	99 (8.5)
	Very minor problem	123 (10.6)
	No problem	740 (63.6)
Urinary function: Over the last 4 weeks, how often have you leaked urine?	Daily	62 (5.3)
	1/week	36 (3.1)
	Less than 1/week	50 (4.3)
	Never	973 (83.7)
Urinary bother: Overall, how big a problem has your urinary function been for you during the last 4 weeks?	Big problem	23 (2.0)
	Moderate problem	71 (6.1)
	Minor problem	95 (8.2)
	Very minor problem	181 (15.6)
	No problem	765 (65.8)

Aim

The intent of this analysis was to provide the clinician with an estimate of the importance of common comorbidities and of SES on items defining sexual function (SF) and UF and related bother.

Methods

The study was approved by the University of Montreal Ethics Committee. The patient population consisted of 1,162 men who participated in one of two consecutive annual screening events. The participation in these events was at the patient's discretion. The events were advertised in local newspapers and television channels. No patient was referred because of urologic symptoms. All individuals completed a questionnaire, which contained six main items. UF, UB, EF, and SB (Table 1) were each respectively addressed by one item, which represents a verbatim extraction from the University of California at Los Angeles Prostate Cancer Index (UCLA-PCI) [10]. Because of the busy setting of questionnaire administration and because of the large number of participants, it was not deemed possible to include the entire UCLA-PCI questionnaire. Instead, select urinary and sexual items were used.

Comorbidities were assessed with a 12-item medical history checklist based on an established rating (Table 2) [11]. This checklist has been extensively used in HRQOL studies addressing PCa outcomes [11,12]. It focuses on the lifetime prevalence of 12 comorbid conditions, such as heart disease, stroke, diabetes, lung disease, kidney disease, gastrointestinal disease, and others. SES was characterized by five items, which had also been used in studies of men with and without PCa (Table 2) [11,13].

Main Outcome Measures

The relationship between comorbid conditions, SES, and HRQoL was assessed using logistic regression analyses. Four separate end points were addressed, namely, UF, UB, EF, and SB. Twelve comorbid conditions and five SES variables represented the predictors. As one objective was to test the individual associations of each predictor with each of the four end points, we fitted one model for each of the 17 predictors and repeated this process for the four separate end points. This resulted in 68 models. Covariates always included age. All analyses addressing the association between individual comorbidities and the four end points were adjusted for all SES variables. All analyses addressing the association between individual SES variables and the four end points were adjusted for all 12 comorbid conditions. In the analyses of one SES variable, adjustment was made for all other SES variables, as these address relatively distinct SES areas. For example, when the effect of education was examined, adjustment was made for age, all 12 comorbid conditions and for work, matrimonial, marital, and income categories. Conversely, in the analyses examining the