

Predictors of Sexual Dysfunction Incidence and Remission in Men

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ABSTRACT

Introduction. The progress and determinants of sexual dysfunction in middle-aged and elderly men remain unclear. **Aim.** To describe the incidence or remission and biopsychosocial predictors of erectile dysfunction (ED) and low sexual desire (SD).

Main Outcome Measures. Erectile function (International Index of Erectile Function) and sexual desire (Sexual Desire Inventory 2) were assessed at follow-up. Sociodemographic, lifestyle, and health-related factors were examined in multivariate models of ED and low SD.

Methods. Data were collected from 810 randomly selected men residing in northern and western Adelaide, Australia, and aged 35–80 years at baseline, who made clinic visits 5 years apart.

Results. At baseline, 23.2% (n = 123) of men had ED. ED incidence and remission were observed in 31.7% (n = 179) and 29.0% (n = 71) of eligible men, respectively. At baseline, 19.2% (n = 165) had low solitary sexual desire, and 6.0% (n = 50) had low dyadic sexual desire; incidence of low sexual desire occurred in 17.6% (n = 83) (solitary) and 8.3% (n = 51) (dyadic), while remission occurred in 15.4% (n = 68) (solitary) and 22.6% (n = 40) (dyadic) of men. In the final regression models, predictors of incident ED were higher age, lower income, higher abdominal fat mass, low alcohol intake, higher risk of obstructive sleep apnea (OSA) risk, voiding lower urinary tract symptoms (LUTS), depression, and diabetes. Predictors of ED remission were lower age, current employment, and absence of voiding LUTS, angina, diabetes, and dyslipidemia. Predictors of low dyadic SD incidence included higher age, never having been married, widowhood, being unemployed, being retired, insufficient physical activity, and low alcohol intake. Predictors of low dyadic SD remission were being married, not being widowed, higher income, lower abdominal fat mass, lower OSA risk, and higher plasma testosterone. Predictors of low solitary SD included never having been married, being unemployed, low alcohol intake, lower testosterone, storage LUTS, and hypertension. Predictors of low solitary SD remission were being married, being employed, higher income, higher physical activity, moderate alcohol intake, and depression.

Conclusions. Sexual dysfunction in aging men is a dynamic disorder whose incidence and remission are predicted by a range of modifiable risk factors. **Martin SA, Atlantis E, Lange K, Taylor AW, O'Loughlin P, Wittert GA, and members of the Florey Adelaide Male Ageing Study (FAMAS). Predictors of sexual dysfunction incidence and remission in men. J Sex Med 2014;11:1136–1147.**

Key Words. Erectile Dysfunction; Sexual Desire; Men's Health; Epidemiology; Risk Factors; Longitudinal Studies

Introduction

Declining sexual function in men has historically been treated as an inevitable consequence of the ageing process. Recent studies suggest that a substantial portion of this decline is associated with accumulated comorbidities of ageing (e.g., diabetes; cardiovascular, kidney, and liver disease; increased medication usage; decreased physical activity; increased central adiposity; and sleep disorders). Incident erectile dysfunction (ED) has been associated with diabetes [1], cardiovascular [2] and musculoskeletal disease [3], depression and anxiety [4], poorer socioeconomic status [5], lifestyle factors [6], declining muscle mass and strength [7], lower testosterone [8], and medication usage [9]. Data from the Massachusetts Male Aging Study (MMAS) demonstrate that erectile function may improve over time and that some of the predictors of these changes are modifiable [10]. To our knowledge at least, this remains the only study to examine the predictors of ED incidence and remission while controlling for the influence of a range of sociodemographic, lifestyle, and health-related factors in a community-based, randomly selected cohort of men.

Data relating to the risk factors for changes in sexual desire are even more limited. Sexual desire, like ED, does not inexorably decline with age. Many of the same disease processes and risk factors that are associated with ED also appear to relate to reduced sexual desire (e.g., hypertension [11], depression [12], smoking [13], low testosterone [14], and antidepressant usage [13]). Furthermore, recent observations suggest that differing domains of sexual desire among men (e.g., desire for sexual activity with a partner vs. by oneself) may be susceptible to different rates of change and risk factors [15].

The objective of the following study was to determine the independent predictors for the incidence and remission of ED and both dyadic and solitary sexual desire in a prospective study of middle-aged to elderly Australian men.

Methods

Study Population

Data were obtained from the Florey Adelaide Male Ageing Study (FAMAS [16]), a longitudinal study of 1,195 randomly selected men living in the northwestern region of Adelaide and aged 35–80 years at recruitment (2002–2005; T1), with

follow-up 5 years later (2007–2010; T2). Approval for the research was obtained from the Royal Adelaide Hospital Research Ethics Committee and the South Australian Aboriginal Health Research Ethics Committee.

Sexual Desire

Sexual desire was assessed with the Sexual Desire Inventory 2 (SDI-2 [17]), which separately measures dyadic sexual desire (defined as interest in or a wish to engage in sexual activity with another person and desire for intimacy) and solitary sexual desire (defined as an interest in engaging in sexual behavior by oneself, or a wish to refrain from intimacy) [17]. In the present study, low dyadic sexual desire was defined as a score of ≤ 16 , and low solitary sexual desire was defined as a score of ≤ 6 [15]. Incidence of low sexual desire was defined as presentation with an SDI-2 score of ≤ 16 (dyadic) or ≤ 6 (solitary) at T2 in men who did not have low sexual desire at T1. Remission of low sexual desire was defined as presentation with an SDI-2 score of ≥ 17 (dyadic) or ≥ 7 (solitary) at T2 in men who had low sexual desire at T1.

Erectile Dysfunction

The erectile function (EF) domain of the full version of the International Index of Erectile Function (IIEF [18]) was used to assess erectile function. Incidence of erectile dysfunction (ED) was defined as presentation with an IIEF-EF score of ≤ 16 (significant ED) at T2 in men with normal erectile function at T1. Remission was defined as the absence of significant symptoms of ED at T2 in men who reported low dyadic and solitary desire and significant ED at T1.

Other Covariates

Measurements of height, weight, blood pressure, and handgrip strength were conducted, along with whole-body and regional (including abdominal) body fat and lean mass assessments by dual-energy X-ray absorptiometry (DEXA) [16].

Information on age, education, marital and occupational status, and smoking behavior was assessed using a questionnaire, which included questions relating to physician-diagnosed and family history of major chronic disease [16]. Depression was assessed using the Beck Depression Inventory version 1A [19]. The probability of obstructive sleep apnea (OSA) was determined using a multivariable prediction questionnaire [20]. In addition to self-report, information relating

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