EPIDEMIOLOGY & RISK FACTORS

Male Sexual Function in New Zealand: A Population-Based Cross-Sectional Survey of the Prevalence of Erectile Dysfunction in Men Aged 40–70 Years

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ABSTRACT

Background: Sexual function declines with age and erectile dysfunction (ED) is a common condition worldwide; however, prevalence rates vary markedly between populations and reliable data specific to New Zealand (NZ) are lacking.

Aim: To assess the prevalence of ED in NZ men using a population-based cross-sectional survey.

Methods: Postal questionnaires were sent, according to a modified Dillman method, to a randomly selected age-stratified population-based sample of 2,000 men 40 to 70 years old obtained from the electoral roll. Self-reported erectile function was assessed using the five-item International Index of Erectile Function (IIEF-5) and the single-question self-assessment tool.

Outcomes: The prevalence of ED is presented as crude, age-adjusted to the distribution of the NZ population, and standardized to the World Health Organization World Standard Population (WSP). Associations between sexual function and age were analyzed using χ^2 test.

Results: The response rate was 30% (599) and 28% (562) were complete for analysis. The crude prevalence of ED was 42% (22% mild, 10% mild to moderate, 6% moderate, and 4% severe), the age-adjusted prevalence was 38%, and the WSP-adjusted prevalence was 37%. Among men reporting ED, 16% were medically diagnosed and 22% were treated. ED affected 24% of men in their 40s, 38% in their 50s, and 60% in their 60s ($P < .001$). Age was associated with a significant increase in diagnosed ED ($P = .001$), treated ED ($P = .006$), dissatisfaction with current sexual function ($P < .001$), associated anxiety or depression ($P = .023$), and a decrease in sexual activity ($P < .001$).

Clinical Translation: Approximately one in three NZ men 40 to 70 years old might have ED. Although comparable to overseas populations, this prevalence is high.

Strengths and Limitations: This study provides the most reliable, comprehensive, and current information on ED and its risk factors in NZ men. Strengths include the large sample, the use of random selection from a population-based sampling frame, established effective survey methods, and the validated IIEF-5. Limitations include the inability of cross-sectional data to determine causation, non-sampling errors associated with the population-based sampling frame, the low response rate, the inability to assess non-respondents, the possibility of men with ED who were sexually inactive not responding or not completing the IIEF-5, and the inherent inability to rule out recall bias.

Conclusion: ED is a marker of subclinical cardiovascular disease. The high prevalence and low levels of diagnosis and treatment indicate a lost opportunity for timely intervention to delay or prevent the progression toward clinical disease. **Quilter M, Hodges L, von Hurst P, et al. Male Sexual Function in New Zealand: A Population-Based Cross-Sectional Survey of the Prevalence of Erectile Dysfunction in Men Aged 40–70 Years. J Sex Med 2017;14:928–936.**

INTRODUCTION

Aging is associated with a decrease in sexual function, yet sexual interest and activity persist into older age.[1] Erectile dysfunction (ED) is common in aging men worldwide and, in addition to its negative implications on quality of life,[2–4] it could indicate an underlying organic disorder.[5] Its prevalence has been investigated in many countries and populations including Australia,[6–9] the United States,[10–14] South America,[15,16] Europe,[17–19] the Middle East,[20,21] and Asia.[22–24] The most commonly reported figure is from the landmark Massachusetts Male Aging Study (MMAS), which found that 52% of men older than 40 years have some degree of ED.[10] The Global Study of Sexual Attitudes and Behaviors (GSSAB)[25] investigated a range of sexual problems in the general population 40 to 80 years old in 29 countries, including New Zealand (NZ). It reported a 25% prevalence of moderate to severe erectile difficulties in 250 NZ men. These were the only NZ data available, and the sample size (small), sampling frame (telephone directory), and sampling method (random-digit dialing with substitutions) made it unlikely that the data were nationally representative. Furthermore, the non-validated question used to assess ED lacked the sensitivity to assess its severity compared with the widely used and validated five-item International Index of Erectile Function (IIEF-5).[26] Studies have suggested that most men with ED do not seek treatment.[6,25,27] Others might receive treatment without appropriate medical assessment. As an early marker of cardiovascular disease,[5] the lost opportunity to diagnose and treat underlying causes and to increase awareness of the complexity of the disorder has serious implications for chronic disease rates. This population-based cross-sectional observational study (the Wellness, Lifestyle and Diet [Well-LaD] study) aimed to assess sexual function including the prevalence of ED in NZ men 40 to 70 years of age.

METHODS

Postal questionnaires were sent to 2,000 men 40 to 70 years old, age stratified by decade, and randomly selected from the NZ electoral roll (August through November 2012). Once a participant was identified, no replacement or substitution was allowed. A modified Dillman method[28] was used with three approaches made: (i) all 2,000 men were sent a survey pack consisting of an invitation and an information letter, a booklet-style survey, a return card, and a reply-stamped envelope; (ii) non-responders were sent a reminder postcard; and (iii) non-responders were sent a final survey pack including an additional form outlining frequently asked questions. A prize draw was used as a motivator. The survey contained no personal identifiers. Participation was voluntary and a returned survey was taken as informed consent. Ethical approval was granted by the Human Ethics Committee of Massey University in New Zealand (HEC Southern A, Application 10/75).

Sample Size

The resident male population of NZ 40 to 70 years old in 2013 was estimated at 768,801.[29] Based on a 5% margin of error, a 95% confidence level, and an estimated response rate of 20%, a sample size of 1,925 was required to obtain 385 complete responses. Two thousand were selected to allow for population morbidity, mortality, and mobility with inherent non-sampling error issues including under-coverage, differential coverage, and decreasing coverage between elections. The study sample (2,000) represented 0.3% of the target population.

Postal Survey

The survey was designed in four sections (sociodemographics, sexual activity and function, lifestyle, and medical history) with a mix of 42 open and closed questions, 6 of which were multi-item tools. The initial survey was piloted twice on six men from varied demographic backgrounds before use. It took approximately 10 minutes to complete. All data were collected by self-report only.

Main Outcome Measures

Ethnicity was by self-identification into single or multiple ethnic groups according to the 2013 NZ Census[29] categories, with multi-ethnicity cases categorized into the minority group for analysis, and as European or non-European (NZ Maori, Pacific peoples, or Asian). Occupational category was classified according to the Australian and NZ Standard Classification of Occupations,[30] with categories reduced from eight to five to decrease complexity and aid comparability with similar studies.

The validated IIEF-5[26] was used to assess ED. The five questions applied to the previous 6 months and covered four domains: (i) erection confidence, (ii) erection firmness, (iii) erection maintenance, and (iv) sexual satisfaction. Each question had five response options, allowing the calculation of a score from 5 to 25 for erectile function. Scores were categorized according to established levels: no higher than 21 indicating ED (17–21 = mild, 12–16 = mild to moderate, 8–11 = moderate, 5–7 = severe) and 22 to 25 indicating no ED. The validated single-question self-assessment tool[31] was included for comparative purposes and required self-reporting into one of four categories: not impotent, minimally impotent, moderately impotent, or completely impotent. Other aspects of sexual activity and function were investigated, including diagnosed ED, treated ED, premature ejaculation, delayed ejaculation, feelings regarding current sexual function, the presence of anxiety or