

THE IMPACT OF NOCTURIA ON PRODUCTIVITY, VITALITY AND UTILITY

Aims of Study

The effect of excessive night-time bladder emptying on individuals' well-being has not been widely investigated. However, it is well known that the lack of sleep can lead to diminished daytime functioning and performance as well as cognitive function. Information on the effect of nocturia on sleep quality is scarce, but available data suggest that it is associated with sleep fragmentation and daytime complaints. We therefore hypothesized that the lack of sleep due to nocturia would reduce individuals' energy levels, thereby affecting their daytime activity and performance as well as their overall quality of life (utility). In addition, we investigated whether this effect was related to the severity of the symptoms.

Methods

The study was performed at the department of urology at the Lund University Hospital in Sweden, and limited to employed or self-employed individuals. Study subjects were recruited through advertisement throughout the country and their suitability for the study assessed in a structured interview by medical personnel. Controls matched for age and gender were randomly selected from a market research panel and given the same interview to ensure the absence of symptoms of nocturia. Both groups were then asked to complete a validated questionnaire regarding productivity at work (Work Productivity and Activity Impairment questionnaire, WPAI), a generic quality of life questionnaire with a specific domain related to vitality (Short Form 36) and a preference-based quality of life questionnaire to measure utility (EuroQol, EQ-5D).

Multiple regression analysis was used to estimate the difference in work impairment, vitality and utility between the groups, as well as the effect of symptom severity.

Results

Within 10 days of the advertisement, 900 individuals contacted the department of urology in Lund, and 242 subjects were interviewed. Of these, 207 were found to have definite symptoms of nocturia and were mailed the three questionnaires. When 203 sets of questionnaires had been returned, the study was closed. Demographics of this sample were analyzed to define a matched control group, and 80 individuals from the market research panel agreed to participate and completed the three questionnaires.

The mean age in the two groups differed slightly (53 and 47 in the nocturia and control group respectively). This difference was however found not to have a significant effect on any of the results in the regression analyses. Women represented half the sample and were slightly younger. The majority of respondents worked full-time with a mean of 39 hours per week. The average number of voids per night during the preceding week was 2.07 (SD 0.99) in the nocturia group and 0.09 (SD 0.16) in the control group.

Individuals with nocturia had a significantly greater work and activity impairment ($p < 0.001$) and a significantly lower level of vitality and utility ($p < 0.001$) than matched controls. The nocturia group also had a significantly lower vitality score than the general population (matched for age and gender), while the score of the control group did not differ from the population values. In addition, the nocturia group had lower scores in all 8 domains of general quality of life measured with the SF36 ($p < 0.001$). Women were significantly more affected than men in all measurements.

Symptom severity (measured as the average number of voids per night) correlated significantly with vitality ($p < 0.01$) and productivity ($p < 0.05$), while the correlation with utility was borderline significant ($p = 0.057$). Work impairment ranged from a mean of 11% for individuals with two voids per night to a mean of 22% for those with 4 or more voids.

Translating work impairment into productivity losses, annual indirect costs for this sample are estimated at SEK 33700 (€ 3645). The reduction in utility can be translated into a loss of 0.09 QALY (equivalent to 32 days in full health).

Conclusions

In an otherwise very healthy group of individuals, excessive night-time voiding has a significant negative impact on overall well-being, vitality and productivity.