

EDITORIAL

Health, Quality of Life and Sleep

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Sleep problems have a relevant impact on the overall health status in the general population, with approximately one-third complaining of poor or insufficient sleep and experiencing insomnia symptoms (1). In a study published 20 years ago (2), Mellinger et al. found that 53% of all severe insomniacs had two or more health problems while only 24% of those without insomnia experienced multiple health problems. A recent survey conducted in primary care population (3) confirmed that insomnia is associated with high risk of co-morbid conditions: the percentage of patients with more than one disease indicated by the ICD-9 categories was 40% among 1191 subjects with no insomnia, and 56% among 1793 subjects with insomnia. Although several reports have described increased prevalence of sleep complaints in the elderly (and this could in part explain the co-morbidity in insomnia), more recent studies employing multiple regression analysis have confirmed that ageing "per se" does not cause sleep problems and healthy elderly people do not have an increased frequency of sleep disorders (1). The quality of life is intrinsically linked to the quality of sleep: the quality of day is tributary to the quality of night and bad nights' sleep often affects daytime mental and physical functioning. The relationship between insomnia/poor sleep and quality of life has been repeatedly studied but the lack of uniform

definitions of both constructs and the use of unstandardized measures has weakened the overall conclusions (4). The number of well validated and sufficiently responsive quality of life measures for use in patients with sleep disorders is limited. There are specific measures in common use for sleep apnea and restless legs syndrome, but not for other sleep disorders. However, as recently suggested by Reimer and Flemons (4), sleep quality and quantity should be routinely assessed in primary care because of its association with quality of life: a single question about quality of life could be somewhat helpful but use of a standard measure that can be completed while the patient is in the waiting room can be much more useful in eliciting the extent to quality of life in different domains.

Sleep disorders have a negative effect not only on the quality of life, but also may have major socioeconomical impact and represent considerable burden to society. These patients have more admissions to hospital, more visits to the general practitioner, higher request of laboratory tests compared to the subjects without sleep disorders (3,5,6). The presence of sleep problems, on the other hand, may contribute to the increased illness intrusiveness in patients with chronic medical disorders. In comparing the prevalence of sleep complaints among patients with diabetes, recent myocardial infarction, chronic paraplegia, musculoskeletal and affective disorders with that among healthy controls, Hyppa and Kronholm (7) concluded that psychological and social factors seem to contribute significantly to the prediction of sleep disorders in patients with chronic illnesses. In a more recent study

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conducted in a middle-aged population in Finland (8), Martikainen et al. found that insomniacs perceived their health as "poor" or "rather poor" more often than others, and depression, asthma, hypertension were more common among them. Insomnia was not a side-effect of the treatment of these diseases; lack of medical treatment was associated with a higher incidence of insomnia. By logistic regression models, Martikainen et al. (8) found that nervousness and tension were the factors most significantly associated with insomnia. The authors conclude that adequate treatment of the somatic disease is important in preventing insomnia, but psychosocial factors appear to be more significantly associated with prolonged insomnia than somatic health problems. Could these findings be gender-related?

An article appearing in this issue, "Sleep in relation to somatic health, mental health and pain" by Asplund and co-workers, evaluated the possible differences in a group of men and women. By a postal questionnaire survey, the authors studied 1948 subjects aged 20-64 years. A forward stepwise regression analysis showed that in men, more severe sleep disturbances were associated with poorer mental health, pain, and poorer somatic health. Correspondingly, more severe sleep disturbances were associated with poorer somatic health, poorer mental health and pain in women. The observation that sleep in women was more strongly related to somatic health than to mental health could appear surprising. First, many of the women in the Asplund's study were engaged in occupational areas with irregular work hours or shift work, such as health care or geriatric care. As pointed out by the authors, sleep impairment is more prevalent in women with shift work or irregular working hours than those with regular working hours. In a recent prospective study (9), it has been reported that stress in the form of a "poor" psychosocial work environment doubled the risk of developing a sleep problem. Moreover, somatic conditions specifically

referable to women, with influence on sleep, are the disorders of the menstrual cycle and the menopausal condition. Several studies suggest that the late luteal phase may be associated with more frequent subjective sleep disturbances, but there are a limited number of studies that have addressed this possibility using polysomnography (10). No major reproducible differences in sleep architecture in women with premenstrual syndrome compared to control women have been reported. However, study samples are small and methodological aspects between studies vary markedly. Much research is required to fully elucidate the impact of disorders of the menstrual cycle on sleep parameters, but it is well known that menopause is associated with sleep impairment due to hot flashes, sweating, sleep-disordered breathing. Finally, other sleep-disturbing conditions, such as restless legs syndrome and periodic limb movements, are more prevalent in women than in men.

In the study of Asplund et al. pain showed similar prevalence rates in the different sleep groups in men and women. For the authors, the explanation of this unexpected result could be the employment status in relation to gender: higher proportion of men had more heavy blue-collar work, such as farming, forestry and building. A very recent study examined the relationship between insomnia and chronic painful physical condition (CPPC) in the general population of five European countries (11). The prevalence of at least one CPPC was higher in women than in men (20.7% vs 13.2%), but in this study subjects also aged >65 years have been included. More than 40% of insomniacs reported at least one CPPC. In middle-aged subjects, CPPC was associated with longer insomnia duration. In multivariate models, CPPC, especially backaches and joint/articular diseases, were at least as importantly associated with insomnia than were mood disorders. The most important finding of the study is that chronic pain contributes

to the maintenance of insomnia. The relationship between pain and sleep is likely to be bi-directional. Indeed, if pain may cause difficulty in initiating and/or maintaining sleep, pain intensity may be as well exacerbated by the lack of sleep.

In conclusion, several surveys confirm that sleep problems are closely related to health status. Methodological differences between studies may explain some different results, but a common finding is that subjects with sleep disorders are more likely to develop somatic and mental disorders. Studies in health maintenance organization enrols have clearly shown that sleep disturbances are independently

associated with significantly greater functional impairment, more days of disability related to health problems, and increased use of health care resources. Although sleep disorders are widespread in society, only a part of patients present with overt sleep complaints (3,12); they instead often present with symptoms of fatigue, excessive sleepiness and impaired waking function. Further education of physician is necessary for improving diagnosis of sleep disorders and prescriptions of suitable treatments, in order to avoid chronicity of the disorders and to reduce the consequences on health and quality of life.

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