

Nightmares in Relation to Health, Sleep and Somatic Symptoms in the Elderly

Ragnar Asplund, M.D., Ph.D.

Sleep complaints and different sleep symptoms are common in elderly persons and increase in parallel with impairment of somatic and mental health and with numerous somatic symptoms. Nightmares are associated with profound sleep disturbances. The present questionnaire survey was undertaken to assess the relationship between occurrence of nightmares and three potentially sleep-disturbing somatic symptoms, namely musculo-skeletal pain, restless legs and muscle cramps in the legs in a large group of elderly persons. The study comprised 6,103 subjects (39.5% men). The ages (mean±standard deviation) of the male and female participants were 73.0±6.0 and 72.6±6.7 years, respectively. Frequently occurring nightmares were reported by 9.0 % of the men and 11.9 % of the women ($p < 0.05$). Among men, frequent nightmares were reported 4.1 (2.1-7.9) times more often by those who experienced such pain very seldom or never, and this figure among women was 5.0 (2.0-8.5) times. Corresponding odds ratios in men and women were 6.1 (2.1-17.3) and 6.1 (3.3-11.3), respectively, and regarding muscle cramps in the legs 9.5 (4.1-22.1) and 6.5 (3.6-11.9), respectively. It is concluded that the occurrence of nightmares in the elderly is increased by musculo-skeletal pain, restless legs and muscle cramps in the legs. **(Sleep and Hypnosis 2003;5(4):175-181)**

Key words: elderly, muscle cramps, musculo-skeletal pain, nightmares, restless legs, sleep, sleep medication

INTRODUCTION

A nightmare is a distressing dream that is clearly recalled (1). There is a high concordance in the occurrence of nightmares in twins and also in the same individual in childhood and adult life (2). Elderly persons have fewer nightmares than young adults (3). Studies of the relationship between nightmares

and mental disorders have given conflicting results. Numerous reports have shown an increased occurrence and severity of nightmares in persons with neurotic or psychotic states, increased anxiety or concern about death (4-6). Other studies have not supported such a relationship between nightmares and psychopathological conditions (7). There are also reports indicating that nightmare distress is linked to psychopathological conditions, while such a link is less obvious regarding nightmare frequency (1). Artistic and creative personality traits have also been considered to characterize life-long nightmare sufferers more often than people in general (4).

From the Family Medicine Stockholm, Karolinska Institutet, SE - 141 83 Huddinge, and the Research and Development Unit (Jämtland County Council), SE - 831 25, Östersund, Sweden

Address reprint requests to: Dr. Ragnar Asplund, Tallvägen 3, SE-833 34 STRÖMSUND, Sweden
Phone: +46-670-100 07 Fax: +46-63-16 56 26
E-mail: r.asplund@telia.com or ragnar.asplund@jll.se

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Increased occurrence of nightmares has been reported to be a common finding in posttraumatic stress disorder (PTSD), especially among persons who have been assessed soon after the trauma (8,9). In some PTSD sufferers sleep-disordered breathing (SDB) has been found and treatment of that condition has resulted in an improvement in both nightmares and PTSD (10).

Numerous factors can disturb normal sleep. Somatic and psychiatric diseases and symptoms, certain medications, and also certain life-style factors increase the risk of insomnia in the elderly (11,12). In elderly people sleep complaints are more strongly related to somatic health than to mental health and age (13). Nightmares cause profound disturbances of sleep, resulting in waking with a feeling of fright and with increasing difficulty in getting back to sleep after nocturnal awakenings (14).

There seem to be only sparse reports on nightmares in association with somatic diseases and symptoms. Such a relationship is reported for spasmodic chest pain, irregular heart beats-both in the elderly and in women of ages 40 to 64 years-and in sleep-disordered breathing (10). There have also been reports that patients with burn injuries causing great pain suffer from severe sleep impairment and nightmares (15,16). Studies addressing the influence of common somatic symptoms on the occurrence of nightmares in the elderly are lacking, although there are numerous reports on the sleep-deteriorating influence of different somatic symptoms.

The present study was undertaken to assess the relationship between the occurrence of nightmares and three potentially sleep-disturbing somatic symptoms, namely musculo-skeletal pain, restless legs and muscle cramps in the legs, in a large group of elderly persons.

MATERIALS AND METHODS

All 10,216 members of the pensioners' association SPF in the Swedish counties of

Västerbotten and Norrbotten were asked to participate in a questionnaire survey. After sending the first questionnaire a further questionnaire was sent to those who did not respond within one month.

The present study is based on that part of the above questionnaire dealing with sleep and health in elderly men and women. Questions were asked about the general state of health and health development during the past five years, and the occurrence of somatic diseases and symptoms. In addition there were questions about nocturnal sleep (good vs. poor). Nightmares were reported by the response alternatives: "very seldom or never", "rather seldom", "rather often" and "very often". In the analysis of the data the groups "very seldom or never" and "rather seldom" were analysed together as "seldom or never" and the alternatives "rather often" and "very often" as "often". The questionnaire contained questions about the occurrence of three symptoms: Musculo-skeletal pain, restless legs and muscle cramps, with four alternative answers: "very seldom or never", "rather seldom", "rather often" and "very often".

Statistical analysis

Standard methods were used for calculating mean values and standard deviations. Group comparisons of non-numerical data were made with the chi-square test. For univariate comparison of frequencies, odds ratios (OR) with a 95% confidence interval (CI) were calculated.

RESULTS

The questionnaire was completed initially by 4,544 persons. In 73 persons the mailing address was wrong, 83 persons declined to participate and 42 persons had died between the times when the member list was obtained and the questionnaire was sent. After a reminder, a further 1,559 answers were received. Thus there were 6,103 evaluable

questionnaires, of which 39.5% were from men. The response rate was 61.3%.

The ages (mean±standard deviation) of the male and female participants were 73.0±6.0 and 72.6±6.7 years, respectively. Sixty-one per cent of the men and 67.3 % of the women lived in urban areas ($p<0.001$). Twenty-six per cent of the men and 57% of the women were living alone.

Health and nightmares

Poor health was reported by 16.8 % of the men and 23.4 % of the women (NS). Health deterioration during the last five years was reported by 30.2 % of the men and 38.2 % of the women ($p<0.01$). Frequently occurring nightmares were reported by 9.0 % of the men and 11.9 % of the women ($p<0.01$). Both poor health and a negative health development during the past five years were more common in men and women who were often troubled with nightmares (Table 1).

in those aged 80 years or older ($p<0.01$).

Frequent awakenings with a feeling of anxiety occurred in 1.8 % of the whole group of men, in 13.1 % of the men who often had nightmares and in 0.8 % of the men with seldom or no nightmares ($p<0.001$). The corresponding frequencies in women were 4.0%, 21.6% and 2.0 %, respectively ($p<0.001$).

Sleep, nightmares and nocturnal somatic symptoms

Musculo-skeletal pain was reported by 32.9% of the men and 44.1% of the women ($p<0.001$). Correspondingly restless legs occurred frequently in 23.6% of the men and 29.9% of the women ($p<0.001$) and muscle cramps in the legs in 13.6% of the men and 27.1% of the women ($p<0.001$). The prevalence of often occurring nightmares increased in parallel with increasing occurrence of all the three symptoms (Table 2).

Table 1. The occurrence (%) of poor health and health deterioration during the past five years in men and women with different frequencies of nightmares seldom or never vs. often.

	Men Seldom or never	Often	p	Women Seldom or never	Often	p
Poor health	14.4	32.4	<0.0001	21.4	39.8	<0.0001
Health deterioration	28.9	43.1	<0.0001	36.1	54.0	<0.0001

Table 2. The prevalence of frequently occurring nightmares (%) in men and women who reported having musculo-skeletal pain, restless legs or muscle cramps in the legs very seldom or never (1) rather seldom (2) rather often (3) and very often (4).

	Nightmares				Totals	p
	1.	2.	3.	4.		
Musculo-skeletal pain						
Men	4.8	5.4	15.3	17.0	8.1	<0.0001
Women	4.6	6.8	17.8	19.5	11.2	<0.0001
Restless legs						
Men	4.1	11.1	22.0	20.8	7.2	<0.0001
Women	4.4	12.7	18.8	21.8	9.2	<0.0001
Muscle cramps in the legs						
Men	2.3	7.0	14.9	18.5	7.4	<0.0001

Nightmares and sleep

Among the men there was no age-related difference in the occurrence of nightmares, but among the women nightmares increased from 9.0 % in those of ages below 70 years to 16.1 %

In men poor sleep was 2.7 (1.7-4.3) times and in women 4.8 (3.5-6.4) times more common in those who were very often troubled by musculo-skeletal pain than in those who experienced such pain very seldom or never. The corresponding odds ratios in men and

women concerning restless legs were 6.8 (3.2-14.3) and 4.2 (2.7-6.5), respectively, and concerning muscle cramps in the legs 2.9 (1.7-4.7) and 2.9 (2.0-4.1), respectively.

Increased occurrence of musculo-skeletal pain, restless legs and muscle cramps in the legs were all associated with increased prevalence rates of nightmares (Figures 1-3).

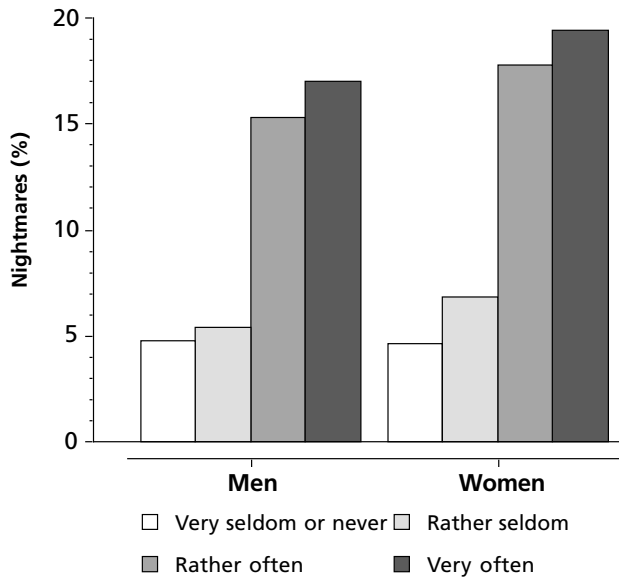


Figure 1. The occurrence of nightmares (%) in men ($p<0.001$) and women ($p<0.001$) in relation to the occurrence of musculo-skeletal pain.

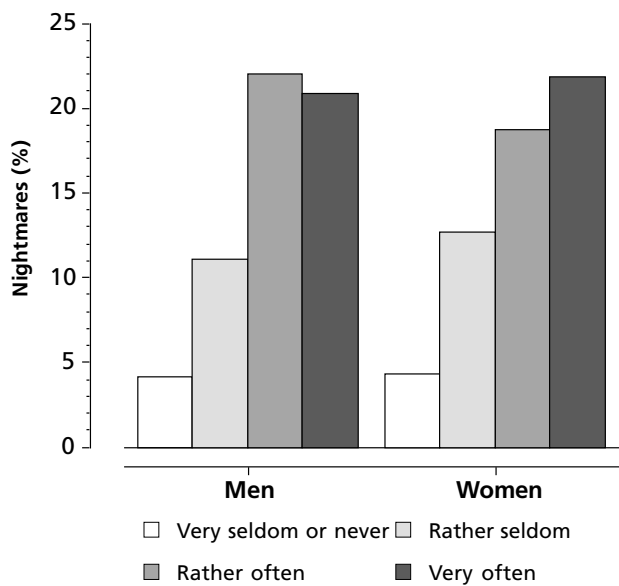


Figure 2. The occurrence of nightmares (%) in men ($p<0.001$) and women ($p<0.001$) in relation to the occurrence of restless legs.

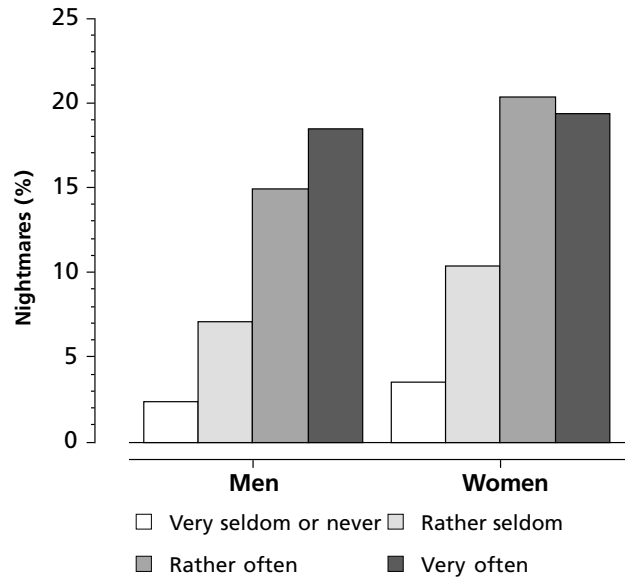


Figure 3. The occurrence of nightmares (%) in men ($p<0.001$) and women ($p<0.001$) in relation to the occurrence of muscle cramps in the legs.

Sleep medication

Sleep medication every night was used by 3.4% of the men and 4.8% of the women. In men the use of sleep medication was unrelated to the occurrence of nightmares but in women sleep medication was 2.8 (1.8-4.4) times more common among those who often had nightmares than in those who seldom or never had them.

Sleep medication was 3.9 (1.9-8.1) times more common in men and 4.2 (2.5-7.1) times more common in women who were very often troubled by musculo-skeletal pain than in those who experienced such pain very seldom or never. The corresponding odds ratios in men and women concerning restless legs were 3.4 (1.1-10.3) and 2.2 (1.1-4.3), respectively. Increased occurrence of muscle cramps in the legs was not associated with increased sleep medication either in men or in women.

DISCUSSION

In this study it was found that elderly persons who were often troubled by nightmares, reported poor health more often than in those

who seldom or never had nightmares. Nightmares have often been regarded as symptoms of neurotic or psychotic states (4-6). Particularly in post traumatic stress disorder, nightmares are almost obligatory and they are one of the diagnostic criteria of this condition (17). However, more recent studies in larger groups of PTSD sufferers have indicated that nightmares may occur less frequently than was found in earlier studies (18).

The occurrence of both poor health and an unfavourable health development during the past five years was increased in parallel with increased reports on nightmares in both sexes. In the elderly, somatic health is more often impaired than mental health, and consequently sleep is more frequently disturbed by somatic than by mental symptoms (12). Previous studies have shown that health and health development, on the one hand, and different sleep characteristics, such as over-all sleep in terms of poor or good, frequent awakenings and difficulty in falling asleep after nocturnal awakenings, at the other, are closely interrelated (11,12).

One important question in the interpretation of the data in the present report concerns the validity of reports on nightmares and other sleep symptoms in a questionnaire. Consistent correspondence has been found between reports on poor sleep and different objective sleep measurements (19,20). Increased frequencies of poor sleep and of increased difficulty in falling asleep after nocturnal awakenings have been found in elderly men and women with an increased propensity for nightmares (14). The correspondence in the present study between the reported propensity for nightmares and a feeling of anxiety on waking supports the view that there is a consistent relationship between the actual occurrence of frequent nightmares and self-reports on this occurrence. Furthermore, the observed influence of pain on waking and on the development of nightmares is supported by the finding that in hospital care of adult

patients with burn injuries the average number of nightmares is significantly correlated with the number of awakenings (21).

Previous studies on the interrelationship between nightmares and different somatic diseases and symptoms seem to have been very sparse. Krakow et al. report that sleep-disordered breathing may be a disregarded comorbid condition in PTSD sufferers and that alleviating of SDB with continuous positive airway pressure (CPAP) has a favourable influence on nightmares (10).

Increasing nightmares in parallel with an increase in irregular heart beats has also been reported in both elderly men and women, and a significant increase in spasmodic chest pain has been noted in elderly women but not men (14). In particular, the occurrence of the two symptoms irregular heart beats and spasmodic chest pain in the same patient was increased three-fold in men and six-fold in women with very frequent nightmares, compared with the whole study group of men and women (14).

In the present study the occurrence of nightmares increased in parallel with an increased occurrence of musculo-skeletal pain in both sexes (Fig. 1). It is known from previous reports that sleep and pain interact in a reciprocal way, in that nocturnal pain impairs sleep, and pain, also in the daytime, is aggravated by poor sleep the previous night (21). An association between pain and sleep impairment was found in the present study and this interaction has previously been well established in different groups of patients with severe or long-standing pain, including those with fibromyalgia and with burn injuries, in whom nightmares are significant components of their sleep problems (21,22). A four-fold increase in sleep medication in men and women who were most troubled by musculo-skeletal pain underscores the evident interaction between sleep impairment and pain. Nightmares increased in parallel with increasing restless legs, and this pattern was similar in men and women (Fig. 2). Restless

legs was also associated with a seven-fold increase in sleep impairment in men and a four-fold increase in women. It is a rather common condition with a calculated prevalence of 10-15 % of an adult population and there is an age-related increase (23,24). Sleep impairment is a frequent finding in restless legs (23). Consequently, sleep medication is twice as common in this group as in persons of the same ages without restless legs (24).

The occurrence of nightmares also increased in parallel with increased occurrence of muscle cramps in the legs (Figure 3). Sleep impairment was reported three times more frequently in men and women who had such cramps very often than in those in whom they occurred very seldom or not at all. Muscle cramps in the legs are relatively common in the elderly, with a 1-

year-incidence rate of 36% in an epidemiological survey in the Netherlands (25). In contrast to subjects with musculo-skeletal pain and restless legs there was no increase in sleep medication in those with muscle cramps. To summarise, in this group of elderly men and women the frequency of nightmares increased in parallel with increased musculo-skeletal pain, restless legs and muscle cramps in the legs. Sleep impairment increased in all these conditions and this pattern was the same in men and women. The results of the study indicate that the occurrence of nightmares in the elderly is increased by somatic sleep-disturbing symptoms, mechanisms which appear not to have been much investigated and apparently have been disregarded in the analysis of distressing nightmares in the elderly.

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