

# Sleep patterns of a rural elderly population

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## SUMMARY

*A complaint of sleep disturbance may be subjective, requiring education and reassurance, but it may also indicate underlying morbidity. Elderly people expect to sleep six to eight hours each night. Many accept fragmentation of sleep and night-time waking as a normal part of ageing.*

**Keywords:** sleep patterns; elderly.

## Introduction

SLEEP becomes more fragmented with age.<sup>1,2</sup> Between 20% and 43% of the elderly population are affected.<sup>3,4</sup> Good and poor sleepers underestimate their sleep length.<sup>5</sup> There may be difficulty initiating and maintaining sleep; there may also be early morning awakening and daytime napping. Psychological and physical impairment and life-events may affect sleep. In order to aid elderly people with their sleep disorders, general practitioners (GPs) require a knowledge of the normal patterns of sleep in the elderly. This study profiled sleep patterns in an elderly population.

## Method

A stratified random sample of elderly people living in their own homes was selected. The strata were the young elderly (65–74 years), middle elderly (75–84 years), and old elderly (over 85 years). A confidential questionnaire was sent to 405 people. The medical records of each person were reviewed. Data were analysed using the Epi-Info version 6.0 software package. Estimates of sleep length were calculated. These lengths were adjusted to take account of episodes of night-time waking. A depression score was used in the questionnaire.<sup>6</sup>

## Results

The response rate was 79.6% (320/405). Apart from a history of urinary problems in responders (11.9% versus 2.4%;  $P < 0.03$ ), there were no significant differences between responders and non-responders in medical history or use of medications. Four-fifths (81.8%) of the elderly felt they had enough sleep, and 69.4% felt refreshed on waking. The most common sleep length was six to eight hours. When adjusted for periods of wakefulness, the modal length of sleep was five to eight hours. The old elderly thought that more than eight hours of sleep per night was normal (15% versus 3.1%;  $P < 0.03$ ). Previous insomnia was associated with difficulty initiating sleep (27% versus 6%;  $P < 0.001$ ) or difficulty maintaining sleep (49% versus 30%;  $P < 0.03$ ). Those falling asleep within thirty minutes were young elderly (61% versus 48.3%;  $P < 0.04$ ). Waking only once at night was associated with feeling refreshed on waking (35.6% versus 21.6%;  $P < 0.02$ ). Only 7.5% of people reported that they never woke at night. A complaint of sleep disturbance arose when sleep length was underestimated or when perceived length of sleep was different

from the amount expected or considered normal for the person's age. Table 1 indicates factors present in those not feeling refreshed on waking.

Two hundred and five responders napped during the day, with 15 people sleeping in both the morning and the afternoon. The young elderly were less likely to nap (40% versus 27.5%;  $P < 0.03$ ). The old elderly were likely to take a morning nap (21.7% versus 5.4%;  $P < 0.01$ ). There was no association between napping and sleep disturbance. A positive depression score was associated with difficulty maintaining sleep (41% versus 28%;  $P < 0.04$ ) but not with early morning waking.

## Discussion

Those who reported sleep disturbance perceived their length of sleep to be different from the amount they expected at their particular age. However, almost half the overall population studied reported waking early in the morning or having difficulty maintaining sleep. Fragmentation of sleep in the elderly has been reported as a frequent occurrence.<sup>1</sup> However, not all these people have consulted their doctor; some elderly people accept it as normal. Even so, this population did accept the six- to eight-hour pattern as the normal one. This is contrary to previous reports.<sup>2</sup> Consulting a doctor about sleep disturbance reflects an elderly person's concern with their health. The astute clinician will recognize this concern, but also the possibility that concurrent illness is disturbing sleep.

Although sleep problems in responders were associated with certain habits, it is difficult to illustrate a causal relationship. These behaviours may be a method of coping with difficulty in sleeping rather than the cause of the disturbance. A management plan should include medication review (e.g. avoiding injudicious use of diuretics), and the GP should seek any history suggestive of sleep apnoea.

Six- to eight-hours sleep is perceived as normal by the elderly population, and this viewpoint should be respected. However, night-time wakefulness and waking earlier each morning are common among elderly people, and the elderly person can be reassured on this point; it need not indicate a disturbance of sleep, provided other causes have been excluded.

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Submitted: 16 December 1996; accepted: 18 August 1997.

© *British Journal of General Practice*, 1998, **48**, 913-914.

**Table 1.** Factors contributing to a failure to wake refreshed each morning.

	Yes (n = 220)	No (n = 97)	P-value
Respiratory disease	22 (10%)	21 (22%)	< 0.01
Anxiety	7 (3%)	9 (9%)	< 0.05
Insomnia	19 (9%)	17 (18%)	< 0.04
Osteoarthritis	70 (32%)	43 (44%)	< 0.04
Gastric reflux	31 (14%)	31 (32%)	< 0.0003
Asthma	13 (6%)	14 (14%)	< 0.02
Diuretics	40 (18%)	28 (29%)	< 0.05
Antiarrhythmics	13 (6%)	14 (14%)	< 0.02
Hypnotics	7 (3%)	17 (18%)	< 0.00002

**Acknowledgements**

I would like to thank the staff at Abbottswood Medical Centre, Pershore for help with sample selection, and Dr M Deighan for advice on developing the questionnaire.

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