Sleep complaints among older general practice patients: association with depression

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ABSTRACT

This study aimed to determine the prevalence of subjective sleep difficulties among general practice patients aged 60 years and over and to investigate their association with depression (CES-D≥16). Sixty-three per cent of the 1029 participants reported experiencing sleep difficulties. Subjects who reported sleep problems were 3.7 times (95% confidence interval = 2.5 to 5.5) more likely to be depressed than those who did not (adjusted for age, sex, financial burden and perceived health). GPs should consider screening for the presence of depressive symptoms whenever older adults complain of sleep difficulties.

Keywords
aged; depression; general practice; insomnia; sleep.

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INTRODUCTION

Sleep complaints are frequent in later life, with self-reported insomnia affecting as many as 60% of the older population at any one point in time.[1] Insomnia tends to follow a chronic course, with sleep complaints remaining basically unchanged for several years among older adults.[2] Those who complain of disturbed sleep have poorer health outcomes, including increased risk of cardiovascular diseases and a variety of psychological symptoms.[3] We designed the present study to determine the prevalence of sleep problems among older adults in contact with their GP, as well as the relevance of its association with depression.

METHOD

The study population consisted of patients aged 60 years or over attending one of 54 randomly selected GPs (500 GPs were approached to yield this number). The list of Western Australian GPs was compiled and grouped according to regional postcodes, with the number of GPs invited to participate being proportional to the number of older adults living in that particular postcode. Each GP recruited 15–30 consecutive patients.

Participants were given the study's self-report questionnaire package by the practice nurse or receptionist before the medical appointment. The Center for Epidemiologic Studies Depression Scale (CES-D), which does not include questions assessing sleep, was used to assess depressive symptomatology. CES-D≥16 indicates the presence of clinically significant depression.[4]

Subjective sleep difficulties were assessed using the three questions from the Cambridge Examination for Mental Health Disorders of the Elderly, Revised (CAMDEX-R):

- Have you recently experienced difficulty falling asleep?
- Have you recently become restless or wakeful during the night?
- Has your sleep pattern changed so that you wake at least 2 hours earlier than usual in the morning and seem unable to fall asleep again?

Subjects were also asked to rate their health as good-excellent or fair-poor, and to indicate whether financial burdens had been part of their lives over the preceding 3 months. Subjects who reported that financial burdens were distinctly or very much part of their lives were considered to be experiencing financial difficulties. Hazardous or harmful drinking was defined as the almost daily consumption of five or more alcoholic drinks. Current smoking was recorded.

Data were analysed with the statistical package Stata, release 8.2 and the α-value was set at 0.05 and all tests were two-tailed.

RESULTS

One thousand and twenty-nine subjects completed the questionnaires, with 35.7% reporting difficulty falling asleep, being restless or wakeful during the night (54.3%), or early morning awakening (35.1%) — 196/1029 (19.0%) recorded problems in all three areas. Table 1 summarises the demographic and clinical information of subjects with and without sleep complaints. Older adults who complained of sleep problems were significantly more likely to be depressed. Table 2 displays the sensitivity and specificity, as well as the positive and negative predictive values of the different types of sleep complaints for the screening of depression. Eighty-five per cent of patients with depression (234/1008) complained of sleep problems.

DISCUSSION

The results of this study confirm that the prevalence of sleep complaints is high among older adults in contact with their GP (62.8%), with approximately one-third of those who report sleep difficulties presenting with clinically significant depressive symptoms. Prospective studies have found that depression increases the risk of incident insomnia by four-fold over a follow-up period of 8 years,[5] and the reverse may also be true. Livingston *et al*,[6] in a study of 524 community-dwelling adults aged 65 years and over, observed that complaints of poor sleep were the most robust predictor of incident depression after a follow-up period of 2 years, being more important than sex, age, marital status, social isolation and physical disability. Others have reported similar results.[2]

Our findings confirm the existence of a strong association between complaints of poor sleep and depression in later life, but show that most people who complain of poor sleep are not depressed. Conversely,

Table 1. Sociodemographic and clinical characteristics of subjects with and without reported sleep difficulties.

	No sleep difficulties (*n* = 383)	Sleep difficulties (*n* = 646)	Mean difference (95% CI[a])	*P*-value
Age in years (mean ± SD)	72.6 ± 7.2	71.8 ± 7.4	0.8 (-0.1 to 1.7)	0.093
Female sex (%)	51.7	60.5	-8.8 (-15.1 to -2.5)	0.006
Married or cohabiting (%)	70.8	68.9	1.9 (-4.5 to 8.4)	0.528
Concern with finances (%)	6.210	12.621	-6.4 (-10.0 to -2.8)	0.001
Limited or no social contact (%)	21.26	19.76	1.5 (-3.6 to 6.6)	0.557
Fair or poor health (%)	19.73	35.93	-16.2 (-21.7 to -10.7)	<0.001
Using sleeping tablets (%)	11.2	39.6	-28.4 (-33.3 to -23.5)	<0.001
Currently smoking (%)	5.2	5.8	-0.6 (-3.5 to 2.3)	0.657
Hazardous or harmful drinking (%)	6.17	7.613	-1.5 (-4.7 to 1.7)	0.379
CES-D (mean ± SD)	7.5 ± 6.55	13.2 ± 9.313	-5.7 (-6.8 to -4.7)	<0.001
Clinically significant depressive symptoms (%)	9.55	31.413	-21.9 (-26.6 to -17.2)	<0.001#

[a]95% CI of the difference between subjects without and with sleep complaints. n describes the number of subjects for whom information was missing. Student's t-test was used for the between-group comparison of age and Mann-Whitney test was used for the between group comparison of CES-D scores. All other between-group comparisons were based on the Pearson's χ^2 statistic [b]P<0.001 after the analysis was adjusted in a logistic regression model for sex, financial burden and poor self-perceived health (odds of being depressed if sleep complaints were present. Odds ratio = 3.66; 95% CI = 2.45 to 5.45)

How this fits in

Over 60% of older adults in contact with their GP complain of poor sleep. Sleep complaints may indicate the presence of a primary sleep disorder, but in later life they are often secondary in nature. This study shows that older adults who complain of poor sleep are almost four times as likely to be depressed as those who do not complain of poor sleep. Screening for depression should be considered when older adults complain of poor sleep.

Table 2. Sensitivity, specificity, positive and negative predictive values of depression among older adults with sleep complaints.

	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Difficulty falling asleep	58	71	38	85
Restless/wakeful during the night	77	53	33	88
Early morning wakening	54	71	36	83
All three sleep complaints	39	87	47	82
Any sleep complaint	85	44	31	90

PPV = positive predictive value. NPV = negative predictive value.

only a small proportion of older adults with depression fails to report some form of sleep problem (demonstrated by a consistently high negative predictive value for all three types of sleep complaints).

Of note, the cross-sectional design of the study does not allow us to infer causality in the relationship between sleep complaints and depression. In addition, the evaluation of depression was based on the scores of a self-rating scale (CES-D) rather than expert clinical assessment, although the approach we used has been previously shown to be valid.[4] Finally, the ascertainment of sleep difficulties was based on the use of three simple questions and, although they may have uncertain validity for the assessment of sleep disorders, they do reflect the subjective experience of patients and, as such, are likely to be clinically relevant and useful.

In conclusion, the results of the present study show that the subjective experience of sleep problems is highly prevalent among older adults in contact with their GP. People who complain of poor sleep are significantly more likely to present with clinically significant depressive symptoms than those who do not complain. GPs and other health professionals involved in the care of older adults should consider screening for the presence of depression whenever faced with complaints of poor sleep.

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Ethics committee

The Human Research Ethics Committee of the University of Western Australia (RA/4/1/0400)

Competing interest

None

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