An Epidemiological Study on Insomnia in an Elderly Thai Population

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Abstract

The authors investigated the one-month prevalence and associations of insomnia in an elderly Thai population. A random sample of 40,111 individuals was selected from those of persons over 60 years of age by multiple stage sampling. The subjects were interviewed using a sleep questionnaire. Prevalence of insomnia of the population was 46.3 per cent. Depression and poor perceived health were factors strongly associated with insomnia. On the basis of these findings, the authors consider the prevalence of insomnia among the Thai elderly to be rather high. The implications of this study are of great importance for the design and development of preventive strategies and community-based interventions.

Key word : Epidemiology, Insomnia, Elderly, Thailand

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Elderly patients have increased sleep complaints and objective measured sleep abnormalities. The complaints often include difficulty falling asleep and staying asleep, early morning awakening with difficulty returning to sleep and unrefreshing sleep. The incidence of insomnia increases darmatically in the elderly. Studies conducted in the general population have found that the prevalence of insomnia and other sleep disturbances increased with age[1-7]. A recent study of 9,000 individuals aged 65 years or

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older found that only 20 per cent rarely or never had sleep complaints. Between 23 per cent and 34 per cent had insomnia complaints and 7 per cent-15 per cent rarely or never felt rested in the morning[8].

Although aging is known to be associated with major changes in sleep structure, sleep quality and sleep timing, it is not yet clear whether the increase in these complaints is a normal part of the aging process. However, studies have found several factors which increased the risk of developing insomnia : aging, medical and psychiatric disorders[1,9-12], and life style factors e.g. overuse of alcohol and smoking[13,14].

In general, several mechanisms could be responsible for the etiology of sleep complaints in the elderly: for example, the aging process which is associated with normal alterations in sleep physiological systems, stressors particularly loss and bereavement that could negatively affect sleep, psychiatric and medical disorders that adversely affect sleep both directly and indirectly, a number of medications that might interact and produce changes in sleep quality, specific sleep disorders e.g. periodic limb movement of sleep (PLMS), sleep apnea and REM sleep behavior disorder.

Insomnia is a common complaint among the elderly that severely affects an individual's quality of life[15]. By definition, insomnia is usually described as diffculty initiating or maintaining sleep or nonrestorative sleep[16]. Prolonged sleep onset latency, nocturnal awakenings, early morning awakening without being able to go back to sleep and negative daytime consequences are also central features of insomnia.

Sleep epidemiological studies in Thailand are still scarce. A previous study conducted in a general population in Thailand showed that approximately one-third had a tendency to have sleep problems and the problems tended to increase with health problems, current stressors, life events and aging[17]. There has been no study focused on the prevalence of insomnia particularly among an elderly Thai population. Therefore, the present study was initiated to find out the prevalence and risk factors in the development of insomnia in an elderly Thai population.

The objectives of this descriptive study were to : (a) estimate the prevalence of insomnia among the elderly of Thailand; (b) cross-sectionally examine the associations between potential risk factors and the presence of insomnia.

METHOD

Subjects

This is the first nation-wide face-to-face survey of the sleep problem. The study was done as part of the national epidemiologic study of cognitive impairment in the elderly, conducted by the Institute of Geriatric Medicine between October 1999 and May 2000. A total of 40,111 community-based individuals, aged 60 years and older were selected by using a multiple stage sampling method. Firstly, 23 provinces were selected according to four geographical regions : north, northeastern, central and south. Next, the districts from each province were chosen and the subjects were drawn randomly from the house register. Dermographic characteristics of the sample are shown in Table 1. The subjects were interviewed by local health officers using a questionnaire.

Measures

A questionnaire was developed to investigate insomnia problems during the previous month and also to focus on demographic characteristics, residential place (north, north estern, central and south), perceived health status, current medical illness, lifestyles (smoking and drinking) and depression. Questions concerning insomnia problems in terms of difficulty initiating sleep (DIS), difficulty maintaining sleep (DMS) and early morning awakening (EMA) were also included in the questionnaire.

Table 1. Demographic characteristics.

	N	%
Sex		
Male	16,540	41.2
Female	23,571	58.8
Age group		
60-64	12,542	31.3
65-69	11,364	28.3
70-74	8,635	21.5
75-79	4,437	11.1
80-84	2,071	5.2
≥ 85	1,062	2.6
Year(s) of education		
0	8,388	20.9
< 4	28,888	72.0
4-10	1,128	2.8
10-12	200	0.5
12-14	157	0.4
Others	1,350	3.4
Total	40,111	100

1. "Do you have difficulty falling asleep at night?" (DIS) (never/sometimes/often/always)

2. "Do you wake up during the night after you have gone to sleep?" (DMA) (never/sometimes/often/always)

3. "Do you wake up too early in the morning and have trouble getting back to sleep?" (EMA) (never/sometimes/often/always)

Questions 1, 2 and 3 were used to identify the presence of DIS, DMS and EMA respectively; the presence of insomnia was identified when the answers to any of the above three questions were "often" or "always".

The demographic characteristics and lifestyle questions included age, sex, marital status, education, perceived physical health status (good/poor), current medical illness (yes/no), habitual smoking (yes/no), habitual drinking (yes/no) and participation in social activities. (active/inactive)

The presence of depression was measured with 12 items that covered the DSM-IV diagnostic criteria for major depressive episode.

Statistical analysis

Data were expressed as mean ± SD, percentage with 95 per cent confidence intervals. Identifying the association of demographic, lifestyle, depression and medical illnesses factors with DIS, DMS, EMA and with insomnia in general were analyzed by univariate analyses. The factors affecting DIS, DMS, EMA and the insomnia in general were analyzed by multiple logistic regression analyses. P-values of less than 0.05 were considered significant.

RESULTS

Prevalence of insomnia

Subjects were considered to have insomnia when they reported on the questionnaire current dif-

Table 2. Association of insomnia with sociodemographic and psychological factors.

Variables	Insomnia			Crude		Adjusted[a]	
	Total	Numbers	%	OR	95% CI of OR	OR	95% CI of OR
Sex							
Male	16,540	6,877	41.6	1.00			
Female	23,571	11,714	49.7	1.39	1.33-1.44**	1.32	1.26-1.38**
Age							
60-64	12,542	5,045	40.2	1.00			
65-69	11,364	5,118	45.0	1.22	1.16-1.28**	1.22	1.16-1.29**
70-74	8,635	4,313	49.9	1.48	1.40-1.57**	1.44	1.36-1.52**
75-79	4,437	2276	51.3	1.56	1.46-1.68**	1.48	1.38-1.60**
80-84	2,071	1,208	58.3	2.08	1.89-2.29**	1.86	1.68-2.05**
≥ 85	1,062	631	59.4	2.18	1.92-2.47**	1.92	1.68-2.20**
Participation in social activities							
Yes	35,037	15,692	44.8	1.00			
No	5,074	2,899	57.1	1.64	1.55-1.74**	1.21	1.13-1.29**
Perceived health status							
Good	26,382	9,887	37.5	1.00			
Poor	13,729	8,705	63.4	2.89	2.77-3.02**	2.00	1.91-2.10**
Depression							
No	34,489	14,315	41.5	1.00			
Yes	5,622	4,276	76.1	4.48	4.20-4.78**	2.83	2.63-3.04**
Underlying disease							
No	29,405	13,035	44.3	1.00			
Yes	10,706	5,556	51.9	1.36	1.30-1.42**	1.23	1.18-1.29**
Alcohol consumption							
No	39,369	18,178	46.2	1.00			
Yes	742	413	55.7	1.46	1.26-1.69**	1.37	1.17-1.60*
Smoking							
No	34,264	15,889	46.4	1.00			
Yes	5,847	2,702	46.2	0.99	0.94-1.05	1.14	1.08-1.22*

Note : OR = odds ratio, CI = confidence interval, * $p < 0.05$, ** $p < 0.01$

a = Adjusted for other factors in multiple logistic regression analyses with stepwise elimination procedure at the $p = 0.05$ significance level for entry into the model.

ficulty falling asleep or waking up during the night or waking up too early in the morning and have difficulty getting back to sleep. Table 2 presents the prevalence of insomnia and associated factors with 95 per cent confidence interval (CI). The overall prevalence was 46.3 per cent (95% CI, 45.9-46.8). The prevalence was 49.7 per cent (95% CI, 49.1-50.3) in women and 41.6 per cent (95% CI, 40.8-42.3) in men. The insomnia problem increased significantly with advancing age. Univariate logistic regression analyses were used first to examine the associations of insomnia with individual variables and then the authors performed multiple logistic regression analysis to adjust for confounding effects of other variables. The results of using multivariate model showed depression was the most significant factor followed by poor perceived health.

Difficulty initiating sleep (DIS) and associated factors

Subjects were considered to have DIS when they reported on the questionnaire current difficulty falling asleep. The overall prevalence of DIS was 30.3 per cent (95% CI, 29.8-30.7). Multivariate logistic regression analysis showed that depression had significant associations with DIS (Table 3)

Difficulty maintaining sleep (DMS) and associated factors

Subjects were considered to have DMS when they reported current waking up during the night on questionnaire. The prevalence of DMS was 32.4 per cent (95%, CI 31.9-32.8). Table 4 shows the prevalence of DMS and significant multivariate logistic regression analyses. Depression was the most signi-

Table 3. Association of difficulty initiating sleep (DIS) with sociodemographic and psychological factors.

Variables	Insomnia			Crude		Adjusted[a]	
	Total	Numbers	%	OR	95% CI of OR	OR	95% CI of OR
Sex							
Male	16,540	4,104	24.8	1.00			
Female	23,571	8,038	34.1	1.57	1.50-1.64**	1.48	1.41-1.55**
Age							
60-64	12,542	3,304	26.3	1.00			
65-69	11,364	3,267	28.7	1.13	1.07-1.19**	1.12	1.06-1.19**
70-74	8,635	2,766	32.0	1.32	1.24-1.40**	1.26	1.18-1.34**
75-79	4,437	1,519	34.2	1.46	1.35-1.57**	1.37	1.27-1.48**
80-84	2,071	847	40.9	1.94	1.76-2.13**	1.71	1.54-1.89**
≥ 85	1,062	439	41.3	1.97	1.73-2.24**	1.71	1.49-1.96**
Participation in social activities							
Yes	35,037	10,128	28.9	1.00			
No	5,074	2,014	39.7	1.62	1.52-1.72**	1.21	1.13-1.29**
Perceived health status							
Good	26,382	5,993	22.7	1.0			
Poor	13,729	6,149	44.8	2.8	2.64-2.88**	2.01	1.92-2.12**
Depression							
No	34,489	9,078	26.3	1.0			
Yes	5,622	3,064	54.5	3.4	3.16-3.55**	2.10	1.97-2.24**
Underlying disease							
No	29,405	8,402	28.6	1.00			
Yes	10,706	3,740	34.9	1.34	1.28-1.41**	1.21	1.15-1.27**
Alcohol consumption							
No	39,369	11,880	30.2	1.00			
Yes	742	262	35.3	1.26	1.08-1.47**	1.24	1.05-1.45*
Smoking							
No	34,264	10,490	30.6	1.00			
Yes	5,847	1,652	28.3	0.89	0.84-0.95**	1.08	1.01-1.16*

Note : OR = odds ratio, CI = confidence interval, * $p < 0.05$, ** $p < 0.01$

a = Adjusted for other factors in multiple logistic regression analyses with stepwise elimination procedure at the $p = 0.05$ significance level for entry into the model.

Table 4. Association of difficulty maintaining sleep (DMS) with sociodemographic and psychological factors.

Variables	Insomnia			Crude		Adjusted[a]	
	Total	Numbers	%	OR	95% CI of OR	OR	95% CI of OR
Sex							
Male	16,540	4,615	27.9	1.00			
Female	23,571	8,374	35.5	1.42	1.36-1.49**	1.32	1.26-1.39**
Age							
60-64	12,542	3,436	27.4	1.00			
65-69	11,364	3,596	31.6	1.22	1.16-1.30**	1.23	1.16-1.30**
70-74	8,635	3,019	35.0	1.42	1.34-1.51**	1.37	1.29-1.46**
75-79	4,437	1,613	36.4	1.46	1.35-1.56**	1.42	1.32-1.54**
80-84	2,071	854	41.2	1.86	1.69-2.05**	1.63	1.47-1.80**
≥ 85	1,062	471	44.4	2.11	1.86-2.40**	1.84	1.61-2.11**
Participation in social activities							
Yes	35,037	10,840	30.9	1.00			
No	5,074	2,149	42.4	1.64	1.54-1.74**	1.22	1.15-1.30**
Perceived health status							
Good	26,382	6,458	24.5	1.00			
Poor	13,729	6,531	47.6	2.80	2.68-2.92**	1.95	1.86-2.05**
Depression							
No	34,489	9,612	27.9	1.00			
Yes	5,622	3,377	60.1	3.89	3.67-4.13**	2.51	2.35-2.68**
Underlying disease							
No	29,405	8,995	30.6	1.00			
Yes	10,706	3,994	37.3	1.35	1.29-1.41**	1.22	1.16-1.28**
Alcohol consumption							
No	39369	12,703	32.3	1.00			
Yes	742	286	38.5	1.32	1.13-1.53**	1.24	1.06-1.46*
Smoking							
No	34,264	11,178	32.6	1.00			
Yes	5,847	1,811	31.0	0.93	0.87-.098**	1.06	0.99-1.14*

Note : OR = odds ratio, CI = confidence interval, * $p < 0.05$, ** $p < 0.01$

a = Adjusted for other factors in multiple logistic regression analyses with stepwise elimination procedure at the $p = 0.05$ significance level for entry into the model.

ficant associated factor followed by poor perceived health, age and sex.

Early morning awakening (EMA) and associated factors.

Subjects were considered to have EMA when they reported on the questionnaire current waking up too early in the morning and having trouble getting back to sleep. The overall prevalence of EMA was 33.0 per cent (95% CI, 32.6-33.5). In multivariate logistic analyses (Table 5) all factors initially associated with EMA still remained significant. The strongest positively associated factors (in order) were depression, poor perceived health and alcoholic consumption.

DISCUSSION

The present study was the first to estimate the prevalence of insomnia in an elderly Thai population. The outcome revealed that insomnia commonly occurred among an elderly population and the overall prevalence was 46.3 per cent including DIS (30.3%) DMS (32.4%) and EMS (33.0%). These findings are also compatible with prior studies both from Eastern and Western countries(8,18-23).

Consistent with data from other surveys, the overall prevalence of insomnia significantly correlated with age(1-7) and was more common among women (2,7,19,21,22,24-32). The authors' previous epidemiological study in a Thai community in Bangkok showed that approximately 30 per cent of the sample experienced sleep problems(17). Although no direct comparison was made, the present findings suggested that insomnia was more common among the elderly group. As for all subtypes of insomnia, the authors also found there was significant correlation between insomnia and age and female sex.

Table 5. Association of early morning awakening (EMA) with sociodemographic and psychological factors.

Variables	Insomnia			Crude		Adjusted[a]	
	Total	Numbers	%	OR	95% CI of OR	OR	95% CI of OR
Sex							
Male	16,540	4,844	29.3	1.00			
Female	23,571	8,408	35.7	1.34	1.28-1.40**	1.26	1.20-1.33**
Age							
60-64	12,542	3,548	28.3	1.00			
65-69	11,364	3,625	31.9	1.19	1.12-1.26**	1.19	1.12-1.25**
70-74	8,635	3,133	36.3	1.44	1.36-1.53**	1.40	1.32-1.48**
75-79	4,437	1,605	36.2	1.44	1.34-1.54**	1.36	1.26-1.47**
80-84	2,071	872	42.1	1.84	1.68-2.03**	1.65	1.49-1.82**
≥ 85	1,062	469	44.2	2.00	1.76-2.28**	1.79	1.56-2.04**
Participation in social activities							
Yes	35,037	11,124	31.7	1.00			
No	5,074	2,128	41.9	1.55	1.46-1.68**	1.18	1.10-1.26**
Perceived health status							
Good	26,382	6,878	26.1	1.00			
Poor	13,729	6,374	46.4	2.46	2.35-2.57**	1.72	1.64-1.81**
Depression							
No	34,489	9,928	28.8	1.00			
Yes	5,622	3324	59.1	3.58	3.38-3.79**	2.47	2.32-2.64**
Underlying disease							
No	29,405	9,262	31.5	1.00			
Yes	10,706	3,990	37.3	1.29	1.23-1.35**	1.18	1.12-1.24**
Alcohol consumption							
No	39,369	12,941	32.9	1.00			
Yes	742	311	41.9	1.47	1.27-1.71**	1.38	1.18-1.61*
Smoking							
No	34,264	11,335	33.1	1.00			
Yes	5,847	1,917	32.8	0.99	0.93-1.05**	1.10	1.03-1.18*

Note : OR = odds ratio, CI = confidence interval, * $p < 0.05$, ** $p < 0.01$

a = Adjusted for other factors in multiple logistic regression analyses with stepwise elimination procedure at the $p = 0.05$ significance level for entry into the model.

As mentioned above, gender differences in the prevalence of insomnia were constant findings in the epidemiological sleep surveys which indicated that insomnia was more prevalent in women. Bixler et al[2] and Kales et al[32] found a high prevalence of DIS in women. While other studies indicated that DMS and/or EMA are also more prevalent in women [32,33]. It would be noteworthy to do a comprehensive study on why women are more prone to insomnia and to what subtype.

Most of the previous studies also found that aging had an effect on the prevalence of insomnia [1-7]. According to the authors' findings, increased age was associated with the risk of insomnia. This might in part be due to fragmentation of sleep commonly found in the elderly as a normal part of aging or some underlying medical or psychiatric disorders.

Another goal of this study was to cross-sectionally identify factors associated with insomnia. By using logistic regression analysis, the authors found that insomnia in the Thai elderly was significantly associated with various factors; these were depression, poor perceived health, advancing age, sex, underlying medical illness, no participation in social activities, alcoholic consumption and smoking. Among these (both insomnia and its subtypes), depression and poor perceived health were the strongest predictors.

Several researchers found association between insomnia and depression in the elderly in both cross sectional and prospective surveys[8,18,19,29,30,34]. Studies of Meggi et al[19] and Foley et al[8] indicated that depression was strongly associated with insomnia while others found that insomnia in women could predict subsequent depression[18], and even-more, sleep disturbance was strongly associated with the risk of future depression[29]. In medical settings, patients seldom identified their sleep habits as the source of the complaints for which they were seek-

ing treatment[35]. Whereas, depression could have an enormous impact on daily activities and emotional well being not less than other serious medical illnesses [36-38]. Therefore, it is particularly important for clinicians to have more concern about sleep problems and perform more thorough evaluation of psychiatric comorbidity.

Another powerful correlation of the risk of insomnia was poor perceived health. This might indicate the possibility that concurrent illness was disturbing sleep. Although it was not possible to determine from this cross-sectional study a causal link between poor perceived health and insomnia, the authors researchers indicated that this association deserved more attention[20,23]. They found that insomnia was relatively persistent or chronic among older adults [21], and sleep disturbances may be one of the symptoms indicating poor health[39]. Hence, insomnia and sleep problem should be integrated whenever systematic clinical evaluation are to be performed. Clinicians must not regard sleep complaints as a normal part of aging or automatically prescribe a hypnotic without initiating proper evaluation of the complaint. They must listen carefully to such complaints because they may contain important clues to their etiology.

Other associated factors from the present study that might be involved in the development of insomnia included alcoholic consumption, concurrent medical illness, no participation in social activity and smoking habit. Results from previous studies were inconclusive on smoking. Karacan et al[40] and Kim et al[22] did not find a significant relationship between smoking and insomnia. While Lexcen et al[41] and Phillips et al[42] indicated that smoking was associated with a high risk of sleep problems. As for the remaining factors from the present findings (concurrent medical illness, no participation in social activities), some researchers also supported that they might influence the risk to develop insomnia. A study published by Ohagon et al[43] indicated that inactivity, dissatisfaction with social life, and the presence of organic diseases were the best predictors of insomnia while being active and satisfied with social life were protective factors against insomnia at any age. Interestingly, these factors might be of great importance for understanding and developing programs to prevent sleep problems particularly sleep hygiene.

In spite of some limitations of this cross-sectional study, the authors concluded that insomnia was a high prevalence problem among an elderly Thai population and it was associated with several factors particularly depression and poor perceived health. To extend the findings of this study and to investigate the causes and the negative health consequences of insomnia, more prospective longitudinal researches are needed and comprehensive programs to detect and prevent sleep problems should be considered.

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REFERENCES

1. Klink ME, Quan SF, Kaltenborn WT, Lebowitz MD. Risk factors associated with complaints of insomnia in a general adult population. Arch Intern Med 1992; 152: 1634-7.
2. Bixler EO, Kales A, Soldatos CR, Kales JD, Healy S, Prevalence of sleep disorders in the Los Angeles metropolitan area. Am J Psychiatry 1979; 136: 1257-63.
3. Ohayon M. Epidemiological study on insomnia in the general population. Sleep 1996; 19 (Suppl 3): S7-15.
4. Pallesen S, Nordhus IH, Nielsen GH, Havik OE, Kvale G. Prevalence of insomnia in the Adult Norwegian Population. Sleep 2001; 24: 771-9.
5. Partinen M, Kaprio J, Koskenvuo M, Langinvaino H. Sleeping habits, Sleep quality, and use of sleeping pills : A population study of 31,140 adults in Finland. In Guilleminault C, Lugaresi E, eds. Sleep/wake disorders : Natural history, epidemiology, and long-term evolution. New York : Raven Press; 1983: 29-35.
6. Quera-Salva MA, Orluc A, Goldenberg F, Guilleminault C. Insomnia and use of hypnotics : Study of a French population. Sleep 1991; 14: 386-91.

7. Ancoli-Israel S, Roth T. Characteristics of insomnia in the United states : Results of the 1991 National Sleep Foundation Survey I. Sleep 1999; 22 (Suppl): 347-53.
8. Foley DJ, Monjan AA, Brown SL, et al. Sleep complaints among elderly persons : An epidemiologic study of three communities. Sleep 1995; 18: 425-32.
9. Gislason T, Almqvist M. Somatic diseases and sleep complaints. Acta Med Scand 1987; 221: 475-81.
10. Morgan K, Clarke D. Risk factors for late-life insomnia in a representative general practice sample. Br J Gen Pract 1997; 47: 166-9.
11. Foley DJ, Monjan A, Simonsick EM, Wallace RB, Blazer DG. Incidence and remission of insomnia among elderly adults : An epidemiologic study of 6,800 personsover three years. Sleep 1999; 22 (Suppl 2): S366-72.
12. Dodge R, Cline MG, Quan SF. The natural history of insomnia and its relationship to respiratory symptoms. Arch Intern Med 1995; 155: 1797-800.
13. Janson C, Gislason T, DE Backer W, et al. Prevalence of sleep disturbances among young adults in three European countries. Sleep 1995; 18: 589-97.
14. Tachibana H, Izumi T, Honda S, Horiguchi I, Manabe E, Takemotot T. A study of the impact of occupational and domestic factors on insomnia among industrial workers of a maufacturing company in Japan. Occup Med 1998; 46: 221-7.
15. Roth T, Ancoli-Israel S. Daytime consequences and correlates of insomnia in the United State : Results of the 1991 National Sleep Foundation Survey. II. Sleep 1999; (Suppl 2): S354-8.
16. Hauri P. Insomnia. Clinics in Chest Medicine 1998; 19: 157-68.
17. Sukying C, Nilchaikovit T. Sleep problems and their correlates in a Thai community in Bangkok : A preliminary report. J Psychiatr Assoc Thail 1997; 42: 66-76.
18. Mallon L, Broman JE, Hetta J. Relationship between insomnia, depression, and mortality : A 12-year follow-up of older adults in the community. Int Psychogeriatr 2000; 12: 295-306.
19. Maggi S, Langlois JA, Minicuci N, et al. Sleep complaints in community-dwelling older persons: Prevalence, associated factors, and reported causes. J Am Geriatr Soc 1998 ; 46: 161-8.
20. Yamaguchi N, Matsubara S, Momonoi F, Morikawa K, Takeyama M, Maeda Y. Comparative studies on sleep disturbance in the elderly based on questionnaire assessments in 1983 and 1996. Psychiatry Clin Neurosci 1999; 53: 261-2.
21. Ganguli M, Reynolds CF, Gilby JE. Prevalence and persistence of sleep complaints in a rural older community sample: The MoVIES project. J Am Geriatr Soc 1996; 44: 778-84.
22. Kim K, Uchiyama M, Okawa M, Liu X, Ogihara R. An epidemiological study of insomnia among the Japanese general population. Sleep 2000; 23: 41-7.
23. Moran MG, Thompson TL, Nies AS. Sleep disorders in the elderly. Am J Psychiatry 1988; 145: 1369-78.
24. Husby R, Lingjarde O. Prevalence of reported sleeplessness in northern Norway in relation to sex, age and season. Acta Psychiatrica Scandinavia 1990; 81: 542-7.
25. Karacan I, Thornby JI, Anch M, et al. Prevalence of sleep disturbance in a primarily urban Florida county. Soc Sci Med 1976; 10: 239-44.
26. Leger D. Guilleminault C, Dreyfus JP, Delahaye C, Paillard M. Prevalence of insomnia in a survey of 12,778 adults in France. J Sleep Res 2000; 9: 35-42.
27. Ohayon MM, Caulet M, Priest RG, Guilleminault C. DSM-IV and ICSD-90 insomnia symptoms and sleep dissatisfaction. Br J Psychiatry 1997; 171: 382-8.
28. Hajak G. Epidemiology of severe insomnia and its consequences in Germany. Eur Arch Psychiatry Clin Neurosci 2001; 251: 49-56.
29. Roberts RE, Shema SJ, Kaplan GA, Strawbridge WJ. Sleep complaints and depression in an aging cohort: A prospective perspective. Am J Psychiatry 2000; 157: 81-8.
30. Ford DE, Kamerow DB. Epidemiologic study of sleep disturbances and psychiatric disorders : An opportunity for prevention? JAMA 1989; 262: 1479-84.
31. Mellinger GD, Balter MB, Uhlenhuth EH. Insomnia and its tueatment : Prevalence and correlates. Arch Gen Psychiatry 1985; 42: 225-32.
32. Kales JD, Kales A, Bixler EO, et al. Biopsychobehavior correlates of insomnia, V : Clinical characteristics and behavioral correlates. Am J Psychiatry 1984; 141: 1371-6.
33. Welstein L, Dement WC, Redington D, Guilleminault C, Mitler MM. Insomnia in the San Francisco Bay Area; a telephone survey. In : Guilleminault C, Lugaresi E, ed. Sleep/wake disorders : Natural history, epidemiology, and long-term evolution. New York: Raven Press; 1983: 73-85.
34. Morin CM, Ware JC. Sleep and psychopathology. Appl Prev Psychol 1996; 5: 211- 24.
35. Doghramji PP. Detection of insomnia in primary care. J Clin Psychiatry 2001; 62 (Suppl)10: 18-26.
36. Hays RD, Wells KB, Sherbourne CD, et al. Functioning and well-being outcomes of patients with depression compared with chronic general medical illness. Arch Gen Psychiatry 1995; 52: 11-9.

37. Simon G, Ormel J, von Korff M, et al. Health care costs associated with depression and anxiety disorder in primary care. Am J Psych 1995; 152: 352-7.
38. Rapp SR, Parisi SA, Walsh DA. Psychological dysfunction and physical health among elderly medical inpatients. J Consult Clin Psychol 1988; 56: 851-5.
39. Manabe K, Matsui T, Yamaya M, et al. Sleep patterns and mortality among elderly patients in a geriatric hospital. Gerontology 2000; 46: 318-22.
40. Karacan I, Thornby JI, Williams RL. Sleep disturbance : A community study. In: Guilleminault C, Lugaresi E, ed. Sleep/wake disorders : Natural history, epidemiology, and long-term evolution. New York: Raven Press; 1983: 37-60.
41. Lexcen FJ, Hicks RA. Does cigarette smoking increase sleep problems? Percept Mot Skills 1993; 77: 16-8.
42. Phillip BA, Danner FJ. Cigarette smoking and sleep disturbance. Arch Intern Med 1995; 155: 734-7.
43. Ohayon MM, Zulley J, Guilleminault C, Smirne S, Priest RG. How age and daytime activities are related to insomnia in the general population : Consequences for older people. J Am Geriatr Soc 2001; 49: 360-6.

การสำรวจปัญหาการนอนไม่หลับของประชากรสูงอายุไทย

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คณะผู้วิจัยได้ทำการสำรวจหาค่าความชุกของปัญหาการนอนไม่หลับใน 1 เดือน และศึกษาลักษณะทางระบาดวิทยาของประชากรสูงอายุในประเทศไทย ทำการสุ่มประชากรตัวอย่างโดยวิธี multiple stage sampling ได้จำนวนทั้งสิ้น 40,111 คน จากทั้งหมด 23 จังหวัด โดยการสัมภาษณ์จากแบบสอบถามเกี่ยวกับการนอนหลับ ความชุกของการนอนไม่หลับของประชากรสูงอายุเป็นร้อยละ 46.3 ตัวแปรที่มีความสัมพันธ์กับปัญหาการนอนไม่หลับมากที่สุดคือ ภาวะซึมเศร้า และความรู้สึกว่าสุขภาพร่างกายไม่ดี ปัญหาการนอนไม่หลับในผู้สูงอายุที่ได้จากการศึกษาครั้งนี้นับว่ามีจำนวนไม่น้อย การศึกษาในโอกาสต่อไปควรให้ความสนใจถึงความสัมพันธ์ของสองปัจจัยดังกล่าวและปัจจัยด้านอื่น เพื่อเป็นแนวทางในการดำเนินงานส่งเสริมและป้องกันปัญหาสุขภาพการนอนในชุมชนต่อไป

คำสำคัญ : ระบาดวิทยา, นอนไม่หลับ, ผู้สูงอายุ, ประเทศไทย

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