



SLEEPING QUALITY OF THE ELDERLY PEOPLE IN CHONBURI PROVINCE, THAILAND

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Abstract

Aims: 1) To investigate sleeping quality of elderly people. 2) To compare sleeping quality among gender, marital status, occupation and education in elderly people.

Methodology: A cross sectional survey study using questionnaire was conducted in Chonburi Province in the Eastern part of Thailand. Study populations were Thai people aged 60 years and over. Purposive sampling method was applied to collect data. Sample size was calculated by Cohen's table 8.4.3, alpha was set to 0.05, beta 0.20, effect size 0.20, k value=11 groups, n= 30X11 (total sample 330). The Pittsburgh Sleep Quality Index (PSQI) was employed to quantified sleeping quality concept.

Results: The PSQI internal consistency was detected by Cronbach Alpha 0.7447. The average age of the respondents was 68.50±3.47. Most elderly subjects were female (n=176, 53.35%) and lived with spouse (n=215, 65.15%). The majority of the subjects (n=130, 39.4%) did not work, 117 (35.5%) completed secondary school, and 236 (71.5%) earned \$229-\$286 per month. Inference statistics by One-way ANOVA confirmed that gender different was not effect elderly sleep quality (p=0.216). Elderly subjects who were single reported better sleep than elderly living with spouse (p=0.026). F-test detected a significantly difference of sleep quality means among different occupations (p=0.009). Post-hoc analysis further identified that elderly who were farmers slept significantly better than elderly who did not work or worked as merchant (p=0.041, 0.014 respectively). The comparison of sleep quality means of 5 different education levels was not significantly different (p=0.93).

Conclusion: The results of the study showed that single elderly people slept better than married elderly. Occupations affected sleep quality. Farmer had better sleep quality than other occupations or those with no jobs. However, gender, education, and income did not affect sleep quality of elderly people in Chonburi province.

Key words: elderly, sleep quality, Pittsburgh Sleep Quality Index

Introduction

- Thai elderly population has increased two-fold from 9.50% in 2000 to 18.69% in 2010.
- Insomnia is a very common complaint in the elderly with serious mental illness (SMI), mild cognitive impairment (MCI), and dementia.
- Sleep problems regularly co-occur with anxiety, mood particularly depression and dysthymia, substance abuse disorders, and impulse-control.
- Sleep disturbance is associated to neurocognitive dysfunctions, including attention deficits, impaired cognitive performance, stress, and depression. Furthermore, these disorders are correlated to sympathetic activity changes and increased risk of cardiovascular and cerebrovascular diseases.
- Poor sleep severely impairs daytime activities socially and work, increases risks of occupational and automobile accidents, and low quality of life.

Figure 1: 7 Components of Pittsburgh Sleep Quality Index (PSQI) ¹



Note:

- Each item is weighted on a 0–3 interval scale: a score of "0" indicates no difficulty, while a score of "3" indicates severe difficulty.
- The global PSQI score is then calculated by totaling the seven component scores, providing an overall score ranging from 0 to 21.
- The lower scores denote a healthier sleep quality.

Objective

This study was aimed to

- 1) investigate sleeping quality of elderly people.
- 2) compare sleeping quality among gender, marital status, occupation and education in elderly people.

Method

- This study used a cross sectional survey by questionnaires.
- The subjects were Thai elderly people ≥ 60 residing at Chonburi province, a big city in the Eastern part of Thailand.
- Sample size was 330 calculated by Jacob Cohen's table 8.4.3, alpha was set to 0.05, beta 0.20, effect size 0.20, k value=11 groups, n= 30X11 (total sample 330). ²
- Non-probabilistic sampling was used in this study. The data was collected from the communities in 11 districts, Chonburi province, Thailand.
- The validated Modified Pittsburgh Sleep quality Index (MPSQI)-Thai Version was employed to quantified sleeping quality (Insomnia). A self-rated questionnaire which assessed sleep quality and disturbances over a 2-week period.
- PSQI scores were compared among gender, marital status, occupation and education using One-way ANOVA statistics.

Results

- The PSQI Thai Version's internal consistency was acceptable, Cronbach's Alpha 0.7447.
- A total of 330 elderly people was surveyed with average age of 68.50±3.47 years.
- 53.35% of subjects were female and 65.15% lived with spouse.
- One third of the elderly people (n=130, 39.4%) did not work and 117 (35.5%) finished secondary school.
- PSQI scores was average 9.60 ± 4.58 out of total 21.
- Most elderly people (n=268, 81.1%) used sleeping medication(s). 70.3% use once or twice a week, and 10.9% use three or more times a week.
- The elderly sleep quality in both genders were not different, p=0.216.
- Single elderly slept better than elderly lived with spouse, p=0.026.
- F-test detected the a significant difference of sleep quality means among elderly with different occupations, p=0.009.
- Post-hoc analysis showed that elderly farmers slept significantly better than elderly who did not work and elderly merchants (p=0.041, 0.014 respectively).
- The comparison of the means of sleep quality of 5 different education levels was not significantly different, p=0.93.

Table 1: Demographic characteristics of the elderly people in Chonburi province, Thailand (n = 330).

Characteristics	n (%)
Gender	
• Male	154 (46.67)
• Female	176 (53.33)
Marital status	
• Lived with spouse	215 (65.15)
• Lived alone	115 (34.85)
Occupation	
• Merchant	115 (34.85)
• Farmer	85 (25.76)
• Did not work	130 (39.39)
Education	
• No education	11 (3.33)
• Primary school	98 (29.7)
• Secondary school	117 (35.45)
• Diploma	70 (21.21)
• Bachelor degree	34 (10.3)
Use of sleeping medication	
• Not use during 2-week period	62 (18.8)
• 1-2 times/week	232 (70.3)
• >2 times/week	36 (10.9)
Age, Mean (S.D.)	68.51 (3.47)
Pittsburgh Sleeping Quality Index, mean (S.D.)	9.60 (4.58)

Figure 2: Graph of the frequency of sleeping medication use.

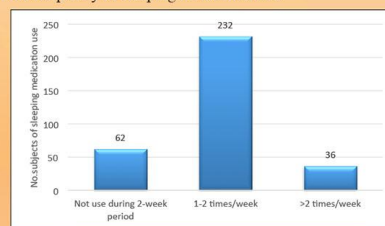
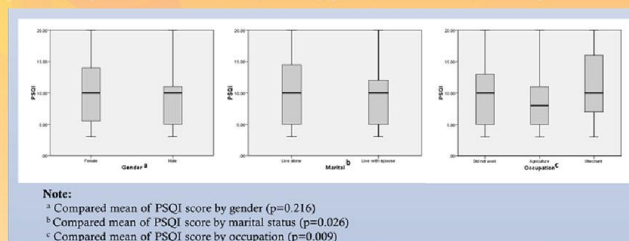


Figure 3: Boxplots of the means of PSQI score by gender, marital status, and occupation



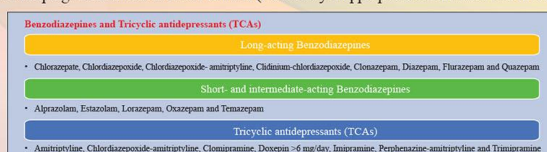
Note:

- ^a Compared mean of PSQI score by gender (p=0.216)
- ^b Compared mean of PSQI score by marital status (p=0.026)
- ^c Compared mean of PSQI score by occupation (p=0.009)

Conclusion

- The sleep quality of elderly people in Chonburi province did not differ between male and female. Therefore, both genders should be intervened to support at insomnia risk of older adults.
- Single elderly people slept better than married elderly. Ones living with spouse had troubles sleeping from restless bed partner such as loud cough or snoring, long pauses between breaths, legs twitching or jerking, and episodes of disorientation or confusion.
- Occupations made sleep quality different, in which farmers' sleep quality was the best compared to the other occupations.
- Education and income did not affect sleep quality of elderly people in this study.
- Most elderly people used sleeping medication more than once a week. Sleeping medications were listed in Beers Criteria Drug Lists as high risk medication drugs for elderly people. This result was similar with previous systematic review of sleep quality using PSQI measure. ¹

Figure 4: Sleeping Medications in Beers Criteria (Potentially Inappropriate Medication Use in Older Adults) ³



References

- [1] Manzar MD, BaHammam AS, Hameed UA, Spence DW, Pandi-Perunallu SR, Moscovitch A, Streiner DL. Dimensionality of the Pittsburgh Sleep Quality Index: a systematic review. Health and quality of life outcomes. 2018 Dec;16(1):89.
- [2] Cohen J. Statistical power analysis for the behavioral sciences. 2nd.
- [3] American Geriatrics Society 2012 Beers Criteria Update Expert Panel. A. American Geriatrics Society Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatrics Society. 2012 Apr;60(4):616-31.

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