Sleep Quality and Mental Health in Elderly People in Indonesia

Ferry Fadzlul Rahman[1,2,3], Herni Johan[4*], Kuan-Han Lina[3]

[1] Public Health Department, Universitas Muhammadiyah Kalimantan Timur, Indonesia

[2] Mutiara Mahakam School of Health Sciences, Samarinda

[3] Department of Healthcare Administration, Asia University, Taiwan

[4] Sekolah Tinggi Ilmu Kesehatan Mutiara Mahakam, Indonesia

Background: Sleep play an important role in maintaining the quality of mental health. Previous studies found that, lack of sleep in elderly influenced their mental state and emotional wellness. Furthermore, those with emotional wellness issues were more likely to have the sleeping disorder or other sleep issues. To examine the correlation between sleep quality and mental health in elderly people in Indonesia.This study employs the Indonesian longitudinal dataset from the Indonesia Family Life Survey (IFLS 5), a set of detailed household and community surveys on Indonesia conducted by RAND. The survey includes the number series from the Health and Retirement Survey Subjective well-being questions sleep disturbance and sleep impairment all eligible subjects were from IFLS 5 and aged 65 years old or above. Pearson correlation was used to examine the correlation between sleep quality and mental health. A total of 1245 individuals were enrolled in this study. The average age was 73 years old (SD.=6.56). Among them, 45 % were male, and 55% were female. The mean score of sleep quality was 19.8 (SD=5.9), and the mean score of mental health was 17.04 (SD=5.0). We found that there was a significant correlation between score sleep quality and mental health total score ($r2=0.413$, $p< 0.01$).Result indicated that sleep quality was correlated with mental health in elderly people in Indonesia. Development of an early prevention program to detect and improve sleep quality and mental health disorders is warranted.

Keywords: sleep quality, mental health, elderly

* Corresponding author：Herni Johan
Address: JL Ery Suparjan RT 12 No 49 A, Sempaja Selatan, Sempaja Sel., Kec. Samarinda Utara, Kota Samarinda, Kalimantan Timur 75119
Email: hernijohan011@gmail.com
Phone: +62 823 5382 0188

Background

Aging of the population is one crucial issue approved by many countries in the world today. Composition the old population is increasing rapidly both in developed countries and countries developing, this started by a decrease in fertility and birth rates mortality (death), as well as increase life expectancy (life expectancy), which change overall population structure(Spiers et al., 2011).

The process of aging of the population is influenced by several factors, for example: improving nutrition, sanitation, health services, to progress in improving education and socio-economic levels. Based on UN data on World Population Aging, it is estimated that there were around 841 million elderly people in the world in 2013. It is estimated that this number will continue to increase to reach 2 billion elderly people in 2050(Baumann, Le Bihan, Chau, & Chau, 2014; WHO, 2012).

Indonesia is the fourth most populous country in the world, after China, India and the United States, and most in the Southeast Asia region from 10 countries that are members of ASEAN, as appropriate Indonesia is a role model for the country neighbors, especially in handling the population, especially the elderly population. Based on population projection data, it is estimated that in 2015, there are 21.68 million elderly people in Indonesia (8.49 percent) of the population, this indicates that Indonesia is a country that will enter the age population due to its population aged 60 years and over (elderly population) exceeds 7 percent. Retirees experience loss of social contacts, financial hardship, and burdensome healthcare needs, which can contribute to stress and exacerbate poor physical and mental well-being. Therefore, to adapt to these challenges, preparation for retirement is very important for the elderly population.

Insomnia is the most common primary sleep disorder and is defined as difficulty falling asleep, staying asleep, or non restorative sleep despite adequate opportunity to sleep. The most common comorbidities associated with insomnia are psychiatric disorders, and it is estimated that 40% of all insomnia sufferers have a coexisting psychiatric condition. Among these psychiatric disorders, depression is most common, and insomnia is a diagnostic symptom for depressive and anxiety disorders(Leggett, Sonnega, & Lohman, 2018)

Method

This study designed to examine the correlation between sleep quality and mental health in elderly people in Indonesia. The study employs the Indonesian longitudinal dataset from the Indonesia Family Life Survey (IFLS 5), a set of detailed household and community surveys on Indonesia conducted by RAND. The survey includes the number series from the Health and

Retirement Survey Subjective well-being questions sleep disturbance and sleep impairment all eligible subjects were from IFLS 5 and aged 65 years old or above. Sleep quality was received with The questionnaire The Pittsburgh Sleep Quality Index (PSQI) consists of 10 component, The Pittsburgh Sleep Quality Index has been designed to assess the quality of sleep during the past month and includes 10 statements with five subscales of sleep quality, sleep latency, sleep duration, appropriate sleep, sleep disturbances, sleep medication, and impaired daily functioning. Likert's scoring system is used for this scale, and the items are scored from 1 to 5(Strauss, March 2016.).

Mental health was received with the questionnaire Depression symptoms were assessed using the self-administered RAND version of Center for Epidemiologic Studies Depression Scale (CES-D). In this study, the full 10-item version was used. Each items were scored from 0 to 3 on the basis of 'how often have you felt this way during the past week', 0 - rarely or none of the time (less than 1 day), 1 - some or a little of the time (1–2 days), 2 - occasionally or a moderate amount of time (3–4 days), and 3 - most or all of the time (5–7 days). It should be noted that positive statements in question number 5 and 8.

Statistical analysis was carried out using SPSS, version 23. Frequencies and percentages were used to obtain the prevalence and general characteristics of the participant. Pearson correlation was used to examine the correlation between sleep quality and mental health.

Result

According to the highest percentage of 27% had women at the age of group 70-80 and 35% had male already married in marital status or in a de facto relationships; the remainder were single, widowed or divorced / separated.

A total of 1245 individuals were enrolled in this study. The average age was 73 years old (SD.=6.56). Among them, 45 % were male, and 55% were female. The mean score of sleep quality was 19.8 (SD=5.9), and the mean score of mental health was 17.04 (SD=5.0). We found that there was a significant correlation between score sleep quality and mental health total score ($r2=0.413$, $p< 0.01$).

Table 1 Socio-demographic characteristics of the sample

| | male (n) | sex | | |
		%	female(n)	%
Age group	65-70	196	16	233	19
	70-80	286	23	333	27
	80 above	78	6	119	10
Martial status	Unmarried	1	0	5	1
	Married	431	35	192	13
	Separated	0	0	4	1
	Divorced	8	1	24	2
	Widow	120	10	460	37

Table 2 Analysis bivariate-Correlations

		Total Depression
	Pearson Correlation	.413
Total Sleep	Sig. (2-tailed)	.000
	N	1245

Discussion

Sleep and mental health are closely connected. Sleep deprivation affects your psychological state and mental health. And those with mental health problems are more likely to have insomnia or other sleep disorders(Belkić & Savić, 2013).

Americans are notoriously sleep deprived, but those with psychiatric conditions are even more likely to be yawning or groggy during the day. Chronic sleep problems affect 50% to 80% of patients in a typical psychiatric practice, compared with 10% to 18% of adults in the general U.S. population. Sleep problems are particularly common in patients with anxiety, depression, bipolar disorder, and attention deficit hyperactivity disorder (ADHD)(Goldman, Chen, Zissimopoulos, Rowe, & Research Network on an Aging, 2018).

Traditionally, clinicians treating patients with psychiatric disorders have viewed insomnia and other sleep disorders as symptoms. But studies in both adults and children suggest that sleep

problems may raise risk for, and even directly contribute to, the development of some psychiatric disorders. This research has clinical application, because treating a sleep disorder may also help alleviate symptoms of a co-occurring mental health problem(Biddle et al., 2017).

The brain basis of a mutual relationship between sleep and mental health is not yet completely understood. But neuroimaging and neurochemistry studies suggest that a good night's sleep helps foster both mental and emotional resilience, while chronic sleep deprivation sets the stage for negative thinking and emotional vulnerability(Olds et al., 2018).

Conclusion

Result indicated that sleep quality was correlated with mental health in elderly people in Indonesia. Development of an early prevention program to detect and improve sleep quality and mental health disorders is warranted

Reference

[1] Baumann, M., Le Bihan, E., Chau, K., & Chau, N. (2014). Associations between quality of life and socioeconomic factors, functional impairments and dissatisfaction with received information and home-care services among survivors living at home two years after stroke onset. *BMC Neurol*, 14, 92. doi: 10.1186/1471-2377-14-92

[2] Belkić, K., & Savić, Č. (2013). *Job stressors and mental health: A proactive clinical perspective*.

[3] Biddle, D. J., Naismith, S. L., Griffiths, K. M., Christensen, H., Hickie, I. B., & Glozier, N. S. (2017). Associations of objective and subjective sleep disturbance with cognitive function in older men with comorbid depression and insomnia. *Sleep Health*, 3(3), 178-183. doi: 10.1093/occmed/kqu028 10.1016/j.sleh.2017.03.007

[4] Goldman, D. P., Chen, C., Zissimopoulos, J., Rowe, J. W., & Research Network on an Aging, S. (2018). Opinion: Measuring how countries adapt to societal aging. *Proceedings of the National Academy of Sciences of the United States of America*, 115(3), 435-437. doi: 10.1073/pnas.1720899115

[5] Leggett, A. N., Sonnega, A. J., & Lohman, M. C. (2018). The association of insomnia and depressive symptoms with all-cause mortality among middle-aged and old adults. *Int J Geriatr Psychiatry*. doi: 10.1002/gps.4923

[6] Olds, T., Burton, N. W., Sprod, J., Maher, C., Ferrar, K., Brown, W. J., . . . Dumuid, D. (2018).

One day you'll wake up and won't have to go to work: The impact of changes in time use on mental health following retirement. *PLoS One*, 13(6). doi: 10.1371/journal.pone.0199605

[7]   Spiers, N., Bebbington, P., McManus, S., Brugha, T. S., Jenkins, R., & Meltzer, H. (2011). Age and birth cohort differences in the prevalence of common mental disorder in England: National psychiatric morbidity surveys 1993-2007. *British Journal of Psychiatry*, 198(6), 479-484. doi: 10.1192/bjp.bp.110.084269

[8]   Strauss, J., F. Witoelar, and B. Sikoki. . (March 2016.). "The Fifth Wave of the Indonesia Family Life Survey (IFLS5): Overview and Field Report". doi: WR-1143/1-NIA/NICHD

[9]   WHO. (2012). 10 Facts On Ageing And The Life Course. 2019, from http://www.who.int/ features/factfiles/ageing/ageing_facts/en/index.html .