

An Assessment of the Effects of Yoga Practicing on Sleep Quality of Older Adults

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Abstract

This study aims to examine the effectiveness of Yoga practicing on sleep quality of older adults. In this study, eighty subjects were recruited at age 55 to 65 (60.5 ± 4.2). Subjects were divided into two groups, Yoga and Control. Participants in Yoga groups practiced 60 minutes/day and 3 sessions/weeks. Participants in Control group maintained daily activities and not doing any exercise program. Sleep quality is measured by The Pittsburgh Sleep Quality Index (PSQI). After 6 months of Yoga practicing, the participants in Yoga group showed significantly better performances in comparison with those of Control group in the sleep patterns with p value $\leq .05$.

Keywords: Yoga, Quality of Sleep, Older Adults.

Introduction

Practicing physical activities contributes to reducing the risk of chronic diseases in the elderly. Regular physical activity practice brings many health benefits, and among the elderly, promotes healthy ageing, decreasing the medicalization, the risk for chronic diseases and institutionalization and enhancing sleep quality (Reid, et al., 2010). Sleep is an important aspect of maintaining the body's circadian rhythm. Insomnia or poor sleep may cause depression (Nutt, Wilson, & Paterson, 2008), falls (Stone, Ensrud, & Ancoli-Israel, 2008), impaired cognition (Fortier-Brochu & Morin, 2014), and poor quality of life (Ishak, et al., 2012).

Yoga is originated from India, which is beneficial for enhancing physical and mental health of people (Iyengar, 1976). There have been documented in some previous findings about the benefits of yoga on improving physical fitness (Nguyen, 2017), reducing blood pressure (Nguyen & Hoang, 2018), enhancing mood (Innes & Selfe, 2012), and the other aspects of quality of life (Mawar, et al., 2015). Several previous studies have also proved the impact of yoga on specific health conditions including diabetes (Upadhyay, Balkrishna, & Upadhyay, 2008), balance and mobility in older community-dwelling people (Tiedemann, O'Rourke, Sesto, & Sherrington, 2013), and subjective sleep quality in patients with chronic insomnia (Khalsa, 2004). In present study, we attempted to evaluate whether a simple yoga practicing could improve sleep quality of older adults living in Vinh city, Vietnam.

Materials and Methods

- Participants: Eighty participants were recruited at age 55 to 65 (60.5 ± 4.2) Vinh city of Vietnam. Inclusion criteria of both groups included the subjects being able to finish Mini Mental State Examination (Folstein, Folstei, & McHugh, 1975) with a score greater than 25 and have no experiences in Yoga. Exclusion criteria included subjects with serious diseases such as symptomatic coronary insufficiency, orthostatic hypotension, and dementia.

- Intervention: Subjects were divided into two groups – yoga and control. The subjects were expected to consent and volunteer. Participants in yoga group were assigned six-month yoga practicing. Participants in control group were instructed to maintain their routine daily activities. Statistics analysis was based on previous finding (Hoang & Nguyen, 2015; Nguyen, 2016, 2017; Nguyen & Hoang, 2018).

- Design

This is a pre-post comparison. Intervention group practiced 60 minutes/day and 3 sessions/weeks including warm-up: 5 minutes; meditation: 25 minutes; breathing exercise: 20 minutes, and relaxation: 10 minutes.

- Measurement of sleep quality

Sleep quality is measured by The Pittsburgh Sleep Quality Index (PSQI). The Pittsburgh Sleep Quality Index is an effective instrument use to measure the quality and patterns of sleep of the older adults. It differentiates “poor” from “good” sleep by measuring seven areas: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction over the last month. The PSQI's simplicity and its ability to identify different groups of patients suggest several clinical and research applications in psychiatry and general medical settings. Most fundamentally, it may be used as a simple screening measure to identify cases and controls, or

‘good’ and ‘poor’ sleepers. (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). The Vietnamese translated version was taken from (Vien Suc Khoe Tam Than Quoc Gia).

- Statistical analysis

All analyses were conducted using SPSS version 19.0. Descriptive statistics and variable correlations were computed to examine the relationships among all study variables. Pre and post comparison was used to assess the differences among phases of study. $P < .05$ is considered to be statistically significant changes.

Results

- Sleep quality of subjects of both groups at baseline

There are no significant differences between both research groups in sleep quality at baseline. Statistical results of ANOVA showed subscales of sleep quality with $p > .05$ included sleep duration, sleep disturbance, Q2 and Q5a, sleep latency, sleep dysfunction, sleep efficiency, overall sleep quality, sleep medicine, and PSQI-Buysse in total as indicated in Table 1.

Table 1. Analysis of variance for sleep quality between both groups at the baseline

Sleep patterns	Yoga (n=40)	Control (n=40)	Sig.*
	Mean ± SD	Mean ± SD	
Sleep duration	.24 ± .65	.25 ± .67	.163
Sleep disturbance	1.17 ± .63	1.23 ± .60	.625
Q2 and Q5a [#]	2.65 ± 1.33	2.56 ± 1.47	.775
Sleep latency	1.67 ± .75	1.60 ± .81	.698
Sleep dysfunction	1.66 ± 1.06	1.56 ± 1.05	.771
Sleep efficiency	1.95 ± .76	1.77 ± .71	.175
Overall sleep quality	1.61 ± 1.04	1.55 ± 1.01	.924
Sleep medicine	.67 ± .62	.73 ± .64	.873
PSQI-Buysse (total)	9.39 ± 4.97	8.04 ± 4.05	.164

- Determined by ANOVA;
- Q2 and Q5a refer to time to get into asleep and cannot get to sleep in 30 minutes.

- Sleep quality of subjects of both groups at the Midpoint (third month)

There are significant differences between the Yoga and the Control groups in sleep quality at the third month of yoga practicing except Q2 and Q5a with $\text{sig} = .275$, $p > .05$. Participants in the Yoga group report better improvement in the rest patterns of sleep quality with $p < .05$ that indicated in Table 2.

Table 2. Analysis of variance for sleep quality between both groups at midpoint (third month)

Sleep patterns	Yoga (n=40)	Control (n=40)	Sig.*
	Mean ± SD	Mean ± SD	
Sleep duration	.09 ± .23	.23 ± .53	.000
Sleep disturbance	.82 ± .43	2.76 ± 1.59	.000
Q2 and Q5a [#]	1.45 ± .85	1.64 ± .81	.271
Sleep latency	1.01 ± .43	1.57 ± 1.07	.002
Sleep dysfunction	1.06 ± .79	1.51 ± .54	.003
Sleep efficiency	1.01 ± .76	1.53 ± 1.05	.004
Overall sleep quality	1.07 ± .83	.14 ± .36	.000
Sleep medicine	.27 ± .55	7.64 ± 3.84	.000
PSQI-Buysse (total)	5.45 ± 2.18	7.63 ± 3.84	.004

- Determined by ANOVA;
- Q2 and Q5a refer to time to get into asleep and cannot get to sleep in 30 minutes

- Sleep quality of subjects of both groups at the Endpoint (sixth month)

Table 3. Analysis of variance for sleep quality between both group at endpoint (sixth month)

Sleep patterns	Yoga (n=37)	Control (n=35)	Sig.*
	Mean ± SD	Mean ± SD	
Sleep duration	.05 ± 2.25	.43 ± 5.61	.000
Sleep disturbance	.75 ± 4.44	.99 ± 4.95	.024
Q2 and Q5a [#]	.92 ± 4.53	2.86 ± 1.52	.000
Sleep latency	.85 ± 3.37	1.73 ± 7.96	.000
Sleep dysfunction	.47 ± 5.06	1.66 ± 1.04	.000
Sleep efficiency	.95 ± 7.35	1.57 ± 6.17	.000
Overall sleep quality	.44 ± 5.01	1.62 ± 9.73	.000
Sleep medicine	.04 ± 1.63	.25 ± 4.38	.007
PSQI_Buysse (total)	3.57 ± 1.59	7.93 ± 3.48	.000

- Determined by ANOVA
- Q2 and Q5a refer to time to get into asleep and cannot get to sleep in 30 minutes

There are significant differences between the Yoga and the Control groups in sleep quality at the endpoint (Table 3). Participants in the Yoga group keep reporting a greater improvement in sleep quality than participants in the Control group with $p < .05$. There were three subjects in Yoga group withdrew from the intervention because of travelling and busy working. There were five subjects in Control group were absent at the endpoint test due to private reasons and travelling.

Discussion and Conclusion

Insomnia is a prevalent problem in late life of people. It is the most common sleep disorder that is subjective report of insufficient or sleep despite adequate opportunity to sleep (Woodward, 1999). The results of this study showed that practicing yoga is beneficial for improving sleep quality of older adults.

Findings of previous studies showed that yoga exercises may be beneficial for improving sleep quality and quality of life for older adults (Halpern, et al., 2014). This research indicated that practicing yoga for at least 25 minutes per day for 12 weeks can improve subjective sleep status and psychological and emotional well-being. In addition, in another comparison of the effect between yoga and aerobic exercises for the sleep quality, Ebrahimi suggested that yoga exercise is more effective in improving the sleep quality in women suffering from diabetes type 2 (Ebrahimi, Guilan-Nejad, & Pordanjani, 2017).

The results of this study with respect to the effect of yoga exercise on sleep quality are in accordance with those by (Cohen, Warneke, Fouladi, Rodriguez, & Chaoul-Reich, 2004; Halpern, et al., 2014; Taibi & Vitiello, 2011). This finding is also consistent with results of some previous findings that yoga could improve healthy, community-dwelling older adults (Chen, et al., 2009), insomnia (Sobana, PaRthaSaRathy, DuRaiSamy, JaiganeSh, & Vadivel, 2013). However, in addition, further study might be focused on effectiveness of yoga exercise on broadening areas of health and some chronic diseases of the elderly.

The results of this study indicated effectiveness of yoga on sleep quality of older adults. After 6 months of yoga practicing, most of sleep patterns of the older adults have been remarkably improved. However, the application of yoga program should be further examined in other older population such as people with chronic diseases of frail elders.

Conflict of Interest

The author has not declared any conflicts of interest.

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