

Research Paper**The Effect of Yoga Practice Based on Biorhythms Theory on Balance and Selective Attention of the Elderly Women*****Morteza Taheri¹**, **Khadijeh Irandoost¹**, **Ali Seghatoleslami²**, **Mina Rezaei¹**

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Yoga, Balance, Selective attention, Biorhythm

ABSTRACT**Objectives** This study aimed to investigate the effect of yoga based on biorhythm theory on the balance and selective attention in the older women.**Methods & Materials** A total of 35 older women with mean (SD) age of 61.1(2.8) year were randomly assigned into three groups: yoga based on biorhythm (n=13); yoga (n=13); control (n=11). Static and dynamic balance tests and Vienna system test were applied to measure the study variables. COG test was used to measure the selective attention. One-way ANOVA test was used to analyze data followed by post-hoc Tukey test.**Results** The results suggested that both motor and cognitive performance, including balance and selective attention were improved significantly ($P \leq 0.05$).**Conclusion** Given the physical and mental weakness of elderly women, practicing yoga exercises are highly recommended in the elderly.**Extended Abstract****1. Objectives**

Degradation in the physiological, physical and psychological capacities created by the environmental conditions affect the elderly lifestyle resulting in disruption of their daily functioning [1, 2]. On the other hand, a decrease in physical fitness can disrupt the elderly's motor function and performance and lead to loss of coordination, balance, muscle strength and flexibility, all of which contribute to reducing sensory motor function, instability and increased risk of collapse [3, 4]. Attention to motor and cognitive function of the elderly, as well as their physical condi-

tion [5], and considering their specific biological conditions, are the major issues that have always been addressed in the elderly. This research aimed to study the effect of yoga practice based on biorhythms theory on the balance and selective attention of the elderly women.

2. Methods and Materials

A total of 35 elderly women with a mean (SD) age of 61.1(2.8) year voluntarily participated in this quasi-experimental study. They were randomly divided into 3 groups: biorhythm yoga (n=13); yoga (n=13); and control (n=13). Inclusion criteria were as follows: older than 60 years, no sleep disturbances (controlled by Pittsburgh sleep quality index), no organized regular activity in the past six months,

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Table 1. One-way ANOVA test results about selective attention variables

Items	Biorhythm Yoga Group (n=13)		Yoga Group (n=13)		Control Group (n=13)		df	Sum of Square	F	Sig.
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest				
	Sum of hits	21.7±1.39	25.19±0.70	2.77±1.34	2.33±1.36	22.30±1.75				
Sum of correct rejections	31.70±1.08	33.56±0.7	31.68±1.33	33.33±0.65	31.66±1.30	31.43±1.07	2	17.57	8.64	0.002***
Mean time hits (s)	1.85±0.041	1.62±0.03	1.88±0.05	1.65±0.11	1.86±0.05	1.86±0.04	2	0.21	50.15	0.001***

*** P≤0.001

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acquiring functional independence conditions based on self-declaration (the ability to perform routine tasks, 45-minute walking and light exercises), no cognitive disorders such as Alzheimer (self-reported), no depression (controlled by Beck depression inventory), having isocratic diet program (controlled by N4 software), and body mass index (BMI) between 25-30.

Cognitron (COG) test within Vienna Test System (VTS) was used to measure selective attention. This test includes the mean time hits, sum hits, and sum correct rejection. The stork test was used to measure static balance, and Timed Up and Go (TUG) test for measuring dynamic balance [4]. Yoga exercises were performed for 8 weeks, 3 sessions per week including Asana, Pranayama and meditation exercises [6].

The first group (biorhythm yoga) exercises were designed based on the biorhythm chart of each individual. To do so, first, based on the date of birth and its entry into the biorhythm software, the physical, emotional, cognitive, and perceptual status of the subjects was extracted, and then the program was designed accordingly. In this group, the 16 days when the quadruple status of the subjects was above 50%, were selected as training days. The t test, 1-way ANOVA and Tukey post hoc test were used at the significant level of 0.05 for data analysis.

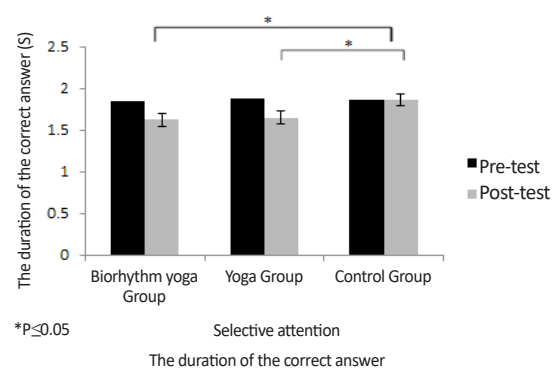
3. Result

Based on KS test resulting in normally distributed data, the parametric test was used. The results of 1-way ANOVA (Table 1) showed a significant difference in the selective attention variables among three groups (P≤0.05). The mean time hits (Figure 1) indicated that the biorhythm yoga and yoga groups had a significant improvement after the intervention compared to the control group (P=0.001 and P=0.005, re-

spectively), and there was no significant difference between these groups (P=0.44)

One-way ANOVA test results showed a significant difference between the static and dynamic balances in subjects after intervention (P≤0.005). According to Tukey post hoc test results about static balance, the biorhythm yoga and yoga groups had a significant improvement after the intervention compared to the control group (P=0.023 and P=0.032, respectively) and there was no significant difference between these groups (P=0.65). The results of t test showed that both static and dynamic balances improved significantly in both experimental groups (P≤0.05), while there was no significant difference in the control group.

Tukey post hoc test results about dynamic balance also revealed that the biorhythm yoga and yoga groups had a significant improvement after the intervention compared to the control group (P=0.001 and P=0.002, respectively) and there was no significant difference between these groups (P=0.43).

**Figure 1.** Comparison of mean time hits among three groups before and after interventionIRANIAN JOURNAL of
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4. Conclusion

Research in the field of executive functions (motor/cognitive factors) in the elderly is limited. Since balancing and improving cognitive performance are very important in old age, evaluation of balancing performance as well as executive performance of the elderly following effective exercise protocols are strongly recommended. Balance and selective attention have the potential to improve with exercises like yoga, which is very important in motor control. Improvement of selective attention and balance can help elderly people in two categories of cognitive and motor abilities, and result in their well-being. However, there is a need for further research on the effectiveness of biorhythms, since it is affected by psycho-biological functions, too.

Ethical Considerations

Compliance with ethical guidelines

This study was conducted after obtaining the permission of the Ethics Committee of Imam Khomeini International University (Ethics Code: 17628).

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Conflict of interest

The authors declared no conflict of interest.

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