

# THE EFFECTIVENESS OF THE RUM WONG DANCE ON PHYSICAL FITNESS OF THE ELDERLY IN NAKHON PATHOM PROVINCE

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## ABSTRACT

Thailand has entered a completely aged society at present. Physical fitness is essential to the life of the elderly. The decrease in physical fitness due to age-related deterioration of the elderly as well as the congenital disease will affect their physical, mental, and social life. Therefore, improving physical fitness is crucial for the elderly to maintain a high quality of life.

This research aims to study the effectiveness of the Rum Wong dance on physical fitness of the elderly in Nakhon Pathom province. Data were collected from 35 samples, using the physical fitness test for aging. Statistical methods used to analyze data were the descriptive statistics, frequency, percentage, average, the Standard deviation, and the paired t-test to compare at the statistical level of  $p < 0.05$  significance.

The results of the study found that

1. General information of participants of "Rum Wong dance" has a total of 35 people answering the test. Most of them were female, which consisted of 523 persons or at the percentage of 97.10. The majority were at the age range of 60 to 69 with a total of 30 people or at the percentage of 85.70. Sources of income were mostly from the pension with a total of 17 people or at the percentage of 48.60. They mostly have the body mass index equal to 18.5 to 22.9 (Weight-appropriate) in a total of 20 people or at the percentage of 57.10. The majority has congenital disease in a total of 18 people or at the percentage of 51.40 and with the exercise behavior at more than 3 times in a total of 34 people or at the percentage of 97.10. Most of them attended the rhythmic activities in a total of 26 people or at the percentage of 74.30.

2. The comparison of the physical fitness of the elderly before and after participation in the Rum Wong dance by applying the Pair t-test to examine the t value. It was found that the physical fitness of the elderly increased after participating in all indices. The indices that increased had statistical differences were 6 items: the Skinfold Thickness (mm), the 30 seconds Arm Curl (times), the 30 seconds Chair Stand (times), the Back Scratch Test (cm), and the 2-minute Step test (times). There are 5 tests that has no significant difference which includes the pulse rate during the rest time (times/min), systolic blood pressure (mm Hg), diastolic blood pressure (mm Hg), sitting crouched forward (cm) and the agility course (seconds).

**Keywords:** Rum Wong Dance, Physical Fitness, the Elderly

## INTRODUCTION

Exercising with the Rum Wong dance on physical fitness of the elderly is the exercise that combines the art of Rum Wong dance together with aerobic exercise according to the rules of

FITT (American College of Sports Medicine, 2008). This type of exercise is low-intensity with continuous body movement for a specified period of time. The intensity of the exercise is gradually increased and slowly decreased, resulting in increased oxygen consumption. As a result, the circulatory system and the respiratory system work efficiently. In addition, the muscles are flexible with good strength, especially the muscle around the joints that helps to support the bones and joints while moving to have balance and reduce the incidence of fracture caused by falling (Magnus, Anders & Caroline, 2008).

Moreover, exercise helps the mind to relax and reduce emotional stress, anxiety, and depression (Kart *et al.*, 1992). Group exercises are essential in motivating a person to be interested and practice physical exercise continuously. Therefore, the Rum Wong dance is an activity that can be applied by adjusting posture to become appropriate for exercising and movement for the elderly in order to help them to have a good quality of life. For these reasons, the researcher has established a research project on the effectiveness of the Rum Wong dance on physical fitness of the elderly in Nakhon Pathom province.

### **RESEARCH OBJECTIVE**

This research aims to study the effectiveness of the Rum Wong dance on physical fitness of the elderly in Nakhon Pathom province.

### **RESEARCH METHODOLOGY**

This research is quantitative research. The population is elderly people in the area of Nakhon Pathom Province. The sample is the elderly in the Elderly Club of Wat Phai Lom, Nakhon Pathom with a total of 35 people.

### **RESEARCH INSTRUMENT**

The instrument used to collect data was the physical fitness test record sheet (Samahito *et al.*, 2013), which consisted of 9 items as follows:

1. Pulse during the rest time (times/min)
2. Blood pressure during the rest time (mm Hg)
3. The Skinfold Thickness (mm)
  - Triceps
  - Abdominal
  - Suprailiac
4. The 30 seconds Arm Curl (times)
5. The 30 seconds Chair Stand (times)
6. Sitting crouched forward (cm)
7. the Back Scratch Test (cm)
  - Right hand on the top
  - Left hand on the top
8. The agility course (seconds)
9. The 2-minute Step test (times)

### Scoring Criteria

Use the physical fitness standard for the elderly aged 60-89 years. (Department of Physical Education, 2013)

### Dance Program

1. The program of Rum Wong dance of this research lasted for 8 weeks, 3 times each with 50 minutes each time.



**Figure 1** Sot Soi Mala  
**Source:** Wilairut Sae-Eiaw, 2017 P. 24



**Figure 2** Rum Chuk Pang Phat Nha  
**Source:** Wilairut Sae-Eiaw, 2017 P. 25



**Figure 3** Rum Sai  
**Source:** Wilairut Sae-Eiaw, 2017 P. 25

### Statistics for Data Analysis

Statistical methods used to analyze data were the descriptive statistics, frequency, percentage, average, the Standard deviation, and the paired t-test to compare at the statistical level of  $p < 0.05$  significance.

### FINDINGS

The results of data analysis on the participation of the Rum Wong dance program are as follows:

**Table 1** The Average and Standard Deviation of Physical Fitness of the Sample before attending the Rum Wong dance program

Physical Fitness Test		(N=35)	
		Before	
		( $\bar{x}$ )	S.D.
1.	Pulse rate during the rest time (times/min)	81.14	14.615
2.	Systolic blood pressure (mm Hg)	128.31	17.017
	Diastolic blood pressure (mm Hg)	73.97	11.501
3.	Skinfold Thickness (mm)	10.72	5.131
4.	The 30 seconds arm curl (times)	21.29	3.477
5.	The 30 seconds chair stand (times)	25.24	6.855
6.	Sitting crouched forward (cm)	11.89	5.974

Physical Fitness Test	Before	
	( $\bar{x}$ )	S.D.
7. The Back Scratch Test (cm)		
- Right hand on the top	16.94	5.931
- Left hand on the top	19.97	6.586
8. The agility course (seconds)	13.83	1.654
9. The 2-minute Step test (times)	163.69	56.914

**Table 2** The Average and Standard Deviation of Physical Fitness of the Sample after attending the Rum Wong dance program (N=35)

Physical Fitness Test	After	
	( $\bar{x}$ )	S.D.
1. Pulse rate during the rest time (times/min)	80.60	11.820
2. Systolic blood pressure (mm Hg)	127.09	17.947
Diastolic blood pressure (mm Hg)	73.80	10.660
3. Skinfold Thickness (mm)	6.761	2.075
4. The 30 seconds arm curl (times)	23.89	3.833
5. The 30 seconds chair stand (times)	27.29	7.797
6. Sitting crouched forward (cm)	11.23	6.704
7. the Back Scratch Test (cm)		
- Right hand on the top	12.71	5.998
- Left hand on the top	15.97	5.813
8. The agility course (seconds)	13.88	2.327
9. The 2-minute Step test (times)	199.20	83.297

**Table 3** The comparison of physical fitness before and after attending the Rum Wong dance program

Physical Fitness Test					t	p
	Before		After			
	( $\bar{x}$ )	S.D.	( $\bar{x}$ )	S.D.		
1. Pulse rate during the rest time (times/min)	81.14	14.615	80.60	11.820	0.252	.802
2. Systolic blood pressure (mm Hg)	128.31	17.017	127.09	17.947	0.463	.646
Diastolic blood pressure (mm Hg)	73.97	11.501	73.80	10.660	0.111	.912
3. Skinfold Thickness (mm)	10.72	5.131	6.761	2.075	4.850	.000**

4.	The 30 seconds arm curl (times)	21.29	3.477	23.89	3.833	-4.575	.000**
5.	The 30 seconds chair stand (times)	25.24	6.855	27.29	7.797	-2.093	.044*
6.	Sitting crouched forward (cm)	11.89	5.974	11.23	6.704	1.000	.324
7.	the Back Scratch Test (cm)						
	- Right hand on the top	16.94	5.931	12.71	5.998	8.505	.000**
	- Left hand on the top	19.97	6.586	15.97	5.813	10.064	.000**
8.	The agility course (seconds)	13.83	1.654	13.88	2.327	-0.130	.897
9.	The 2 minutes Step test (times)	163.69	56.914	199.20	83.297	-3.780	.001**

**Remark:** \*\*statistical level of significance at  $\leq 0.01$

\*statistical level of significance at  $\leq 0.05$

## CONCLUSION

The study of the effectiveness of the Rum Wong Dance on Physical Fitness of the Elderly in Nakhon Pathom Province can be concluded as follows.

The comparison of physical fitness of the elderly before and after attending the Rum Wong dance program by using the Pair t-test to examine the t value, it was founded that:

1. The average pulse rate during the rest time (times/min) after attending the program is 80.60 and its S.D. = 11.820; whereas, before attending the program is 81.14 and its S.D. = 14.615. The result indicated that the average pulse rate during the rest time (times/min) after attending the program is less than before attending the program with no statistically significant difference.

2. The average systolic blood pressure (mm Hg) after attending the program is 127.09 and its S.D. = 17.947; whereas, before attending the program is 128.31 and its S.D. = 17.017. The result indicated that the average systolic blood pressure (mm Hg) after attending the program is less than before attending the program with no statistically significant difference.

3. The average diastolic blood pressure (mm Hg) after attending the program is 73.80 and its S.D. = 10.660; whereas, before attending the program is 73.97 and its S.D. = 11.501. The result indicated that the average diastolic blood pressure (mm Hg) after attending the program is less than before attending the program with no statistically significant difference.

4. The average skinfold thickness (mm) after attending the program is 6.761 and its S.D. = 2.075; whereas, before attending the program is 10.72 and its S.D. = 5.131. The result indicated that the average skinfold thickness (mm) after attending the program is less than before attending the program with a significant difference at statistical level of 0.01.

5. The average of the 30 seconds arm curl (times) after attending the program is 23.89 and its S.D. = 3.833; whereas, before attending the program is 21.29 and its S.D. = 3.477. The result indicated that the average of the 30 seconds arm curl (times) after attending the program is less than before attending the program with a significant difference at statistical level of 0.01.

6. The average of the 30 seconds chair stand (times) after attending the program is 27.29 and its S.D. = 7.797; whereas, before attending the program is 25.24 and its S.D. = 6.855. The result indicated that the average of the 30 seconds chair stand (times) after attending the program is less than before attending the program with a significant difference at statistical level of 0.05.

7. The average of the sitting crouched forward (cm) after attending the program is 11.23 and its S.D. = 6.704; whereas, before attending the program is 11.89 and its S.D. = 5.974. The result indicated that the average of the sitting crouched forward (cm) after attending the program is less than before attending the program with no statistically significant difference.

8. The average of the Back Scratch Test with the right hand on the top (cm) after attending the program is 12.71 and its S.D. = 5.998; whereas, before attending the program is 16.94 and its S.D. = 5.931. The result indicated that the average of the Back Scratch Test with the right hand on the top (cm) after attending the program is less than before attending the program with a significant difference at statistical level of 0.01.

9. The average of the Back Scratch Test with the left hand on the top (cm) after attending the program is 15.97 and its S.D. = 5.813; whereas, before attending the program is 19.97 and its S.D. = 6.586. The result indicated that the average of the Back Scratch Test with the left hand on the top (cm) after attending the program is less than before attending the program with a significant difference at statistical level of 0.01.

10. The average of the agility course (seconds) after attending the program is 13.88 and its S.D. = 2.327; whereas, before attending the program is 13.83 and its S.D. = 1.654. The result indicated that the average of the agility course (seconds) after attending the program is less than before attending the program with no statistically significant difference.

11. The average of the 2-minute Step test (times) after attending the program is 199.20 and its S.D. = 83.297; whereas, before attending the program is 163.69 and its S.D. = 56.914. The result indicated that the average of the 2 minute Step test (times) after attending the program is less than before attending the program with a significant difference at statistical level of 0.01.

## DISCUSSION

The results of comparative data analysis on the participation of the Rum Wong dance program with the physical fitness test in various aspects as follows: 1) Pulse rate during the rest time 2) Blood Pressure 3) the Skinfold Thickness 4) the Arm Curl 5) the Chair Stand 6) the Sitting Crouched Forward 7) the Back Scratch test 8) the Agility Course and 9) the step test by applying the Pair t-test to examine the t value. It was founded that the physical fitness of the elderly has increased after attending the dance program in which the index that has increased with statistically significant difference were these 6 following items: the skinfold thickness (mm), the 30 seconds arm curl (times), the 30 seconds chair stand (times), the Back Scratch Test with the right hand on the top (cm), the Back Scratch Test with the left hand on the top (cm), and the 2-minute Step test (times). This is resulted from attending the music composing activity that have mixed movements in different directions; having fun with music, rhythm, and dance moves which is the basic movement that makes muscles and joints become flexible and have good balance.

The index with no statistically significant difference were these 5 following items:

the pulse rate during the rest time (times/min), the systolic blood pressure (mm Hg), the diastolic blood pressure (mm Hg), the sitting crouched forward (cm), and the agility course (seconds). This can be resulted from the intensity of the activity that was not suitable for the sample as it was at the same intensity throughout the program and lack of the increase in appropriate intensity to increase the efficiency of blood circulation and muscle capacity.

However, exercising in the elderly should be the exercise with the intensity, frequency, duration, and the type of the physical activity that suits with the age in order to develop the physical fitness of the elderly, including having food that suits for the elderly (Kingkaew, *et al.*, 2020). Additional, food and exercising are the factors affecting the quality of life of elderly (Siladlao, 2021). This corresponded to the study of Purakom (2016) showed the Physical Activity for reducing the deterioration of the physical functioning in the elderly from 6 regions of Thailand which founded that after attending the program of 8 months duration, the elderly has the average physical fitness in physical operation greater in every aspect. This also conformed to the research of Carvalho (2012) studied on the effect of an exercise program on functionality and physicality in elderly women. It was founded that the elderly who joined the physical activity program to promote their health for 10 months has better physical fitness in the aspect of having an increase in flexibility of muscles.

## **Recommendation**

The recommendation for the future research were as follows:

1. The effect of the Rum Wong dance program on physical fitness of the elderly in the aspect of intensity, duration, and frequency of the increase in program should be examined.
2. Research should be further conducted on the development of the Rum Wong dance program with various movement speeds for the elderly.

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## **REFERENCES**

- American College of Sports Medicine. (2008). ACSM's health physical fitness assessment manual (2nd ed). Baltimore: Lippincott Williams & Wilkin.
- Carvalho, J., et al. (2012). Health Promotion practice: effect of an exercise program on functionality and physicality in elderly women. *Journal of Science and Medicine in sport*, 15(1): S288.
- Department of Physical Education. (2013). *Sport Psychology*. Bangkok: Department of Physical, Ministry of Tourism and Sports.
- Kart, C. S, Metress, E. K, & Mestress, S. P. (1992). *Human aging and Chronic disease*. Boston: Jones and Bartett.
- Kingkaew, W. M., Siraphatthada, Y. & Thitivesa, D. (2020). The Role of Self-Care Behavior to Thai Traditional Medicine for Elderly: Case of Ban Dung, Udon Thani Province. *International Journal of Psychosocial Rehabilitation*, 24(01).
- Magnus, K. K., Anders, N., & Caroline, K. (2008). Physical activity, muscle function, falls and fractures. *Food & Nutrition Research*. 1-7.
- Purakom, A., et al. (2016). *Physical Activity for reducing the deterioration of the physical functioning in the elderly*. Bangkok: Thai Health Promotion Foundation.



- Sae-Eiaw, W. (2017). Development of the Learning Activities Thai Dramatic Art on Thai traditional Dance using Davies's Method. Thesis for the degree of Master of Education in Curriculum and Instruction Graduate School, Suratthani Rajabhat University.
- Samahito, S. (2013). Test and Physical Fitness Standard for the Elderly of the age of 60-89 years old. Sport Science Bureau, Department of Physical Education, Ministry of Tourism and Sports.
- Siladlao, S. (2021). Factors affecting the quality of life of elderly clubs in Bang Nok Kwak Bang Tee District, Samut Songkhram Province. *Research and Development Health System Journal*, 14(3), 298-309.