



AENSI Journals

## Advances in Environmental Biology

ISSN-1995-0756 EISSN-1998-1066

Journal home page: <http://www.aensiweb.com/AEB/>

### Comparison of Some Physical Fitness Factors in Outstanding Roman and Free Style Wrestlers in Qazvin Province

<sup>1</sup>Amir Darabi, <sup>2</sup>Arsalan Damirchi, <sup>3</sup>Farhad Rahmaninia

<sup>1</sup>Department of Agriculture, college of Physiology, Takestan branch, Islamic Azad university, Takestan, Iran

<sup>2</sup>Associate professor of Sport Sciences School, University of Guilan

<sup>3</sup>Faculty member of Guilan University

#### ARTICLE INFO

##### Article history:

Received 13 June 2014

Received in revised form 22 July 2014

Accepted 10 September 2014

Available online 21 September 2014

##### Keywords:

Physical fitness, aerobic power, anaerobic power, free and Roman style wrestling.

#### ABSTRACT

The current study sought to compare some of the fitness factors in outstanding Roman and free style wrestlers in Qazvin province. The subjects were randomly selected and included 8 free style wrestlers and 8 Roman style wrestlers. Fitness factors examined in this study include: Speed, Agility, VO<sub>2</sub> max, anaerobic power and strength. Tests of 45- meter speed run, 4 × 9 Agility, 1, 600 meters, Sargent jump, leg squat, and chess press were taken from two subject groups of Roman and freestyle wrestlers separately and the results were analyzed using ANOVA. The final results of the present study showed that only the anaerobic power of free and Roman style wrestlers showed significant difference.

© 2014 AENSI Publisher All rights reserved.

**To Cite This Article:** Amir darabi, Arsalan Damirchi, Farhad Rahmaninia, Comparison of Some Physical Fitness Factors in Outstanding Roman and Free Style Wrestlers in Qazvin Province. *Adv. Environ. Biol.*, 8(12), 758-760, 2014

### INTRODUCTION

Movement is the basis of physical education and sports, and it is the most obvious sign of living. Today the necessity of physical activities is felt more than ever and the majority of people are familiar with the beneficial effects of exercise and physical training. Today, success in competitive sports depends on application of scientific principles [25]. Therefore, recognition of peoples' situation and identifying factors affecting success and growth of athletes in higher levels need appropriate research activities, precise laboratory equipment and devices. Lack of awareness of individual differences and structural factors makes problem and cause extra cost and time in enhancing performance of athletes in wrestling, preparing them, especially young people, for successful participation in athletic fields. Therefore, understanding the factors affecting good performance of athletes in sports fields is necessary.

In for wrestling sport, there is no need to rolling and stretching exercises, but the aim is to strengthen muscle, so that it could evacuate the most power at one moment, that is to be quite aggressive and with violence and strength, can evacuate the most power in the least time. Generally, physical fitness is the ability for performing daily tasks with strength and agility, without feeling fatigue and also having enough energy to engage in recreational activities in leisure time.

Amount of ability and efficiency of body depends on growth and fitness of heart, lungs and blood vessels. In addition to these cases, body shape, quality of nutrition, general health, enough sleep and rest, freedom from mental stress also play important role in physical fitness. As was seen, physical fitness is associated with broad implications and has different meanings for different people. Many factors are involved in physical fitness, most important of which are: power, agility, coordination of nerve and muscle, and balance. Also, psychological issues such as motivation, anxiety, .... are involved in physical fitness.

Physical fitness factors are generally divided into two categories: one is related to healthiness and the other to motor skills. In related to the health, healthy lifestyle, performance quality improvement, and necessary issues for human health are considered. Cardio – respiratory fitness, muscular strength, muscular endurance and flexibility are among the factors dependent to health.

In related to motor skills, improvement of sport performance's quality and other physical activities are considered that although are not necessary to protect human health, but in everyday life they are dealt with. The

**Corresponding Author:** Amir Darabi, Department of Agriculture, college of Physiology, Takestan branch, Islamic Azad university, Takestan, Iran

factors of this type of fitness are speed, power, agility, act speed, balance, and coordination. In the present study, differences between some fitness factors in Roman style and free style wrestlers are investigated.

#### Methodology:

The present study is applied regarding the objective, and on the other hand it is considered a descriptive research in terms of collecting data and information and making inferences from them. The study population consisted of wrestlers in Qazvin province that were selected randomly 15 to 25 year old wrestlers in Roman and free style; they had at least one year experience in the practice and taking part in Wrestling Championship. Also according to the number of outstanding wrestlers of Qazvin province, it was tried to select 8 wrestlers in free style and of 8 ones in Roman style as sample for investigation and test. Tests used included: 1) 45- meter speed run to measure the speed of body movement 2) 4 × 9 test in order to evaluate the agility 3) test of 1600 -meters to evaluate VO<sub>2</sub> max 4) Sargent jump test for anaerobic power 5) chest Press and leg Squat to measure the strength of upper limbs and lower limbs of the body.

The mentioned tests were taken separately from Roman and free style wrestlers and the results were compared.

#### Results and Findings:

The results of the ANOVA test showed a significant difference between groups for speed values at a significance level of  $P \leq 0 / 05$ . However, post hoc Tukey test for determining differences between the groups showed that there is no significant statistical difference between Roman and free style wrestlers.

**Table 1:** Results of Tukey test to determine differences between groups in speed values.

Significance	Standard deviation	Difference mean	Values of speed
0.004	1.67	0.54	free
0.003	1.67	0.57	roman

The results of the ANOVA test showed a significant difference between groups for agility values of free and Roman style Wrestlers at a significance level of  $P \leq 0 / 05$ . However, post hoc Tukey test for determining differences between the groups showed that this difference is not statistically significant.

**Table 2:** Tukey test to determine differences between groups for Agility values.

Significance	Standard deviation	Difference mean	Values of agility
0.002	1.46	0.28	free
0.004	1.46	0.24	roman

Results of the ANOVA test showed a significant difference between groups for maximal oxygen consumption values for free and Roman style wrestlers at a significance level of  $P \leq 0 / 05$ . However, Tukey test for determining differences between the groups showed that this difference is not statistically significant.

**Table 3:** Tukey test to determine differences between groups for amounts of oxygen consumption.

Significance	Standard deviation	Difference mean	Oxygen consumption
0.000	2.64	0.47	free
0.000	2.64	0.68	roman

Results of the ANOVA test showed a significant difference between groups anaerobic power values of free and Roman style wrestlers at a significance level of  $P \leq 0 / 05$ . However, Tukey test for determining differences between the groups showed that this difference is not statistically significant.

**Table 4:** Tukey test to determine differences between the groups for values of anaerobic power.

Significance	Standard deviation	Difference mean	anaerobic power
0.061	0.24	0.69	free
0.069	0.24	0.68	roman

Results of the ANOVA test showed a significant difference between groups for power values of free and Roman style Wrestlers at a significance level of  $P \leq 0 / 05$ . However, Tukey test for determining differences between the groups showed that this difference is not statistically significant.

**Table 5:** Tukey test to determine differences between the groups for the power values.

Significance	Standard deviation	Difference mean	Values of Power
0.003	0.48	2.64	free
0.003	0.48	2.63	roman

#### Discussion and conclusions:

The final results of the current study, using statistical tests (variance analysis and Tukey test) showed that only in aerobic power of outstanding Roman and free style wrestlers in Qazvin province there was a significant

difference. Considering the impact and importance of anaerobic power on all quality aspects of wrestlers, it can be concluded that expectations in wrestling regarding the use of physical power is higher than before, and more attention should be devoted to that since focusing on this important issue will have a lot of benefits for wrestlers. But the results obtained were consistent with the study by Rashid Lemaire *et al.*, and it was shown that anaerobic power is a kind of dynamic sport activities; and that could be due to state of laws governing the type and difference of free and Roman style wrestling. Naser Nourbakhsh in a study entitled "Comparison of physical fitness among young Iranian outstanding free and Roman style wrestlers, " concluded that Except in the case of sit-ups, flexibility and endurance breathing, using reversible heart rate to the initial state and the 1, 200 – meter run that show superiority of Roman wrestlers, there is no significant difference in the other tests, and generally in body, physical and motor fitness in both groups. This difference in some other fitness factor, is possibly the result of many factors such as body composition, anthropometric characteristics, percentage of slow-twitch and fast-twitch fibers, and many other factors.

Seyed Mustafa Tayebi Sani in his research concluded that students in the north of Tehran are superior to students in the southern city of Chaboksar in some physical fitness factors such as the speed and agility ; and the differences may be due to climatic differences. But in the present study because of roughly constant atmosphere and environment, no noticeable difference in the anaerobic power was observed. In general, it seems that anaerobic power difference between free and Roman style wrestlers is the result of individual differences and the type of wrestling dose not affect this factor of physical fitness. regarding values of speed, agility, maximal oxygen consumption and power, considering the coefficient of variance analysis, this study is consistent with the above study since such relationships including importance of paying attention to factors and values influencing success in wrestling sport, can be used in creating physical and body fitness and bring Satisfaction of performance. such a result was revealed in the previous studies; in some researches on free and Roman style wrestling not much distinction has been considered for those two, and such factors have been identified as influential for success in this sport.

But the final result is that to implement tactical strategies in wrestling sport, huge investments in aerobic and anaerobic power should be done; and this important result has been obtained in the study by Rashid Lemaire *et al.*. It is also important and plays great role in creating and enhancing physical power in athletes that is in accordance with the study by Simpson.

#### REFERENCES

- [1] Gaeini, A., H. Rajabi, 2004. "Physical fitness" Samt publication, Tehran.
- [2] Sheikh, M., *et al*, 2008. Evaluation and Measurement in Physical Education and Sports Science. Bmdad Ketab Publication.
- [3] Sandgol, H., 1993. "Exercise Physiology", Volume I, Tehran, National Olympic Committee, Summer.
- [4] Gaeini, A., K.H. Ibrahim, 2005. "Foundations of Exercise Physiology". Publisher: PNU, 2005.
- [5] Heyward, V., 2004. "The scientific principles, and specialized physical fitness " translators: Gataiiny, AA., Hamidinia, M., Rajabi, H.. Publication of Physical Education office of police.
- [6] Nourbakhsh, N., 1996. Thesis entitled "Comparison of physical fitness among young Iranian outstanding free and Roman style wrestlers."
- [7] Tyby Sani, S.M., 2001. Thesis entitled "Comparison and evaluation of physical fitness of high school student in Southern Tehran and Northern Tehran".
- [8] Morgan, W.P., 1985. Selected psychological factors limiting performance: A mental health model. In Clarke, D. H, and Eckert, H. M. (Eds), Limits of Human performance: 70-80.
- [9] Tetlie, T., N. Eik-Nes, T. Palmstierna, P. Callaghan, J.A. Nottestad, 2008. The effect of exercise on psychological and physical health. J Psychosoc Nurs Ment Health Serv., 46(7): 38-43.
- [10] Murphy, M., S.J. Fleck, Dudley, R. Gollister, 1990. Psychological and performance concomitants of increased volume training in athletes. Journal of Applied sports psychology, 2: 34-50.
- [11] Martinsen, E.W., 2008. Physical activity in the prevention and treatment of anxiety and depression. Nord J Psychiat, 62(47): 25-9.
- [12] Lane, A.M., H. Lane, S. Firth, 2002. Performance satisfaction and post competition mood among runners: moderating effects of depression. Perceptual motor skills, 94(3 pt 7): 805.