

The Comparison of Turkish Folk Dancers with Sedentary People in Terms of Some Physical Fitness Parameters¹

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Abstract

The aim of this study was to compare Turkish folk dancers with sedentary people in terms of some physical fitness parameters. 12 women and 14 men from Turkish folk dances team, which took part in a contest in 2013 and 12 sedentary women and 14 sedentary men from Muğla Sıtkı Koçman University, totally 52 volunteers, participated in this study. Height, weight, strength, flexibility, vertical jump and anaerobic power of subjects were measured with measuring tools. Descriptive and Mann-Whitney U tests in SPSS 16.0 were used to analyze data. When physical fitness parameters of men Turkish folk dances athletes and sedentary men were compared, while statistically significant difference was found between the right-hand grip strength, the left-hand grip strength and vertical jump ($p<0.05$), there was no statistical difference found between other variables ($p>0.05$). When physical fitness parameters of women Turkish folk dances athletes and sedentary women were compared, while statistically significant difference was found between the right-hand grip strength, the left-hand grip strength, vertical jump and anaerobic power ($p<0.05$), there was no statistical difference found between other variables ($p>0.05$). Consequently, it was found that the right and left handgrip strength and vertical jump values of women and men Turkish folk dances athletes were higher than sedentary. It can be said that these differences result from that they usually do exercises for development of these parameters because of the nature of this sport branch.

Key Words: Turkish folk dancers, physical fitness, sedentary

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1. Introduction

Dance has emerged as the form of expression of primitive human beings to imitate nature to respect and pray to sacred beings that they could not understand (Koçaklar, 1998). It is possible to understand from the documents that have been reached so far that folk dances consisted the most important part of religious ceremonies that first civilizations such as Shamans, Oghuzs and Huns organized in history (Akyıldız, 2000). Folk dances and folk songs are constant cultural values of a nation's history. These two elements that have an important place in cultural mosaic of Turkish nation keep their existences by adapting themselves today's changing and developing conditions (Şengül, 2010). Eroğlu (1995) defined folk dances as movements that represent cultural values of the society, express an event, pleasure or sadness. These movements can be displayed solo or in a group, with or without music. The origins of these movements are religious and magic (cited in Kıvrak, 2009). Kaya (2009) suggested that folk dances have been a rich cultural symbol that embodies different phenomenon by taking place in history of societies and nations.

Ocak and Tortop (2013) stated that Turkish folk dances have systematic and wide movement form and benefit organism physically and physiologically. Karacabey et al. (2008) emphasized that this activity that has wide perspective revives the need of different scientific methods and different viewpoints.

Baltacı and Düzgün (2008) defined physical fitness as feeling physically, physiologically and psychologically good and the ability to be successful in daily activities without being exhausted. Zorba and Saygın (2009) defined physical fitness as doing movements accurately and current physical condition related to physical endurance. Physical fitness goes into two divisions namely; physical fitness related to health and physical fitness related to sport. While physical fitness related to health consists of components enhancing functional capacity of body, physical fitness related to sport includes components associated with performance in different sport branches (Baltacı and Düzgün, 2008).

Turkish folk dances positively affect most psychological functions such as enjoying life, protecting body from stress (Gerek, 2007). Turkish folk dances take place in education, individuals' organic, neuromotor, mental, and emotional development (Tapmaz, 2012). When it is tried to analyze dancing person, it is possible to see all the parts of the body are in motion. All the movements in folk dances consist of movements people use in their daily life. The purpose of education is to socialize individuals and provide them a holistic development physically, mentally and psychosocially (Emekçiöğlü, 2001).

While participating in Turkish folk dances activities provides individuals better understanding of social, cultural and geographical factors, they affect physical development as well. Physical and mental effort is needed to learn any dance of a region. Complex, quick and long acting steps have direct impact on physical condition of individuals. Complex steps improve skills and coordination, long acting and quick steps affect motoric parameters such as

endurance and strength. The aim of this study is to compare Turkish folk dancers and sedentary people in terms of some physical fitness parameters.

2. Methods

12 women and 14 men from Turkish folk dances team, which took part in a contest in 2013 and 12 sedentary women and 14 sedentary men from Muğla Sıtkı Koçman University, totally 52 volunteers, participated in this study. Tests used in the study repeated twice and best one was recorded.

Weight was measured with an electronic weighbridge accurate to 0.1 kg; height was measured with 0.01 cm sensitivity digital height gauge. Handgrip strength (right and left), back and leg strength were measured with hand, back and back dynamometers. Vertical jump board was used to measure vertical jump strength. In this test, feet were adjacent to each other and body was upright position, both arms extended up. Before jumping, the highest position the subject touched was marked. After jumping, the highest point was marked. The distance between the points was taken into account for measuring vertical jump strength. Sit and reach test was used to measure flexibility. Before the test, subjects were asked to warm up. After warm up, subjects sat down and propped against test stand barefooted. Without bending the knees, subjects tried to reach the possible distance and waited there for two seconds. The best performance was recorded after two attempts (Özer, 2001; Tamer, 2000; Zorba and Saygın, 2009). Anaerobic power was measured with Lewis formula (Tamer, 2000; Zorba and Saygın, 2009).

$$P=(\sqrt{4.9 \times \text{body mass (kg)} \times \sqrt{\text{Vertical jump}})$$

$$P = \text{Anaerobic power (kg-m/sec)}$$

$$D = \text{Vertical jump (cm)}$$

Statistical Analysis:

Descriptive and Mann-Whitney U tests in SPSS 16.0 were used to analyze data. Significant level was accepted as 0.05.

3. Results

Table 1. Descriptive analysis of Turkish folk dancers

	Gender	N	Mean	SD
Age (year)	Female	12	21,67	1,72
	Male	14	21,86	2,07
Height (cm)	Female	12	160,0	5,29
	Male	14	174,5	3,39
Weight (kg)	Female	12	57,42	4,60
	Male	14	77,07	3,71
Right Handgrip Strength (kg)	Female	12	30,55	1,57
	Male	14	41,55	1,65
Left Handgrip Strength (kg)	Female	12	29,88	1,44
	Male	14	39,32	1,45
Back Strength (kg)	Female	12	69,84	3,73
	Male	14	104,79	7,99
Leg Strength (kg)	Female	12	63,73	3,40
	Male	14	95,68	6,81
Vertical jump (cm)	Female	12	28,00	4,00
	Male	14	38,29	2,55
Anaerobic Power (kg.m2/sec)	Female	12	84,30	8,75
	Male	14	98,21	5,03
Flexibility (cm)	Female	12	25,52	3,75
	Male	14	15,27	2,05

In table 1, descriptive analysis of Turkish folk dancers was shown. Age mean of female Turkish folk dancers was found to be 21.67 ± 1.72 , age mean of male Turkish folk dancers was found to be 21.86 ± 2.07 . Height mean of female Turkish folk dancers was found to be 160 ± 5.29 cm, height mean of male Turkish folk dancers was found to be 174.5 ± 3.39 . Weight mean of female Turkish folk dancers was found to be 57.42 ± 4.60 kg, weight mean of male Turkish folk dancers was found to be 77.07 ± 3.71 kg. Right handgrip strength mean of female Turkish folk dancers was found to be 30.55 ± 1.57 kg, right handgrip strength mean of male Turkish folk dancers was found to be 41.55 ± 1.65 kg, left handgrip strength mean of female Turkish folk dancers was found to be 29.88 ± 1.44 kg, left handgrip strength mean of male Turkish folk dancers was found to be 39.32 ± 1.45 kg. Back strength mean of female Turkish folk dancers was found to be 69.84 ± 3.73 kg, back strength mean of male Turkish folk dancers was found to be 104.79 ± 7.99 kg. Leg strength mean of female was found to be 63.73 ± 3.40 kg, leg strength mean of male was found to be 95.68 ± 6.81 kg. Vertical jump mean of female Turkish folk dancers was found to be 28.00 ± 4.00 cm, vertical jump mean of male Turkish folk dancers was found to be 38.29 ± 2.55 cm. Anaerobic power mean of female Turkish folk dancers was found to be 84.30 ± 8.75 kg-m/sec., anaerobic power mean of male Turkish folk dancers was found to be 98.21 ± 5.03 kg-m/sec. Flexibility mean of female Turkish folk dancers was found to be 25.52 ± 3.75 cm, flexibility mean of male Turkish folk dancers was found to be 15.27 ± 2.05 cm.

Table 2. Descriptive analysis of Sedentary

	<i>Gender</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>
Age (year)	Female	12	21,00	1,85
	Male	14	21,36	2,02
Height (cm)	Female	12	161,25	4,01
	Male	14	174,71	3,44
Weight (kg)	Female	12	60,42	1,39
	Male	14	77,21	1,49
Right Handgrip Strength (kg)	Female	12	28,25	1,99
	Male	14	39,60	1,16
Left Handgrip Strength (kg)	Female	12	27,20	4,09
	Male	14	38,05	6,22
Back Strength (kg)	Female	12	68,49	3,29
	Male	14	103,79	6,85
Leg Strength (kg)	Female	12	63,55	2,70
	Male	14	96,50	4,80
Vertical jump (cm)	Female	12	22,75	5,24
	Male	14	32,50	8,46
Anaerobic Power (kg.m2/sec)	Female	12	63,65	3,99
	Male	14	97,14	2,28
Flexibility (cm)	Female	12	23,13	5,73
	Male	14	15,66	2,09

In table 2, descriptive analysis of sedentary was shown. Age mean of female sedentary was found to be 21.00 ± 1.85 , age mean of male sedentary was found to be 21.36 ± 2.02 . Height mean of female sedentary was found to be 161.25 ± 4.01 cm, height mean of male sedentary was found to be 174.71 ± 3.44 cm. Weight mean of female sedentary was found to be 60.42 ± 1.39 kg, weight mean of male sedentary was found to be 77.21 ± 1.49 kg. Right handgrip strength mean of female sedentary was found to be 28.25 ± 1.99 kg, right handgrip strength mean of male sedentary was found to be 39.60 ± 1.16 kg, left handgrip strength mean of female sedentary was found to be 27.20 ± 4.09 kg, left handgrip strength mean of male sedentary was found to be 38.05 ± 6.22 kg. Back strength mean of female sedentary was found to be 68.49 ± 3.29 kg, back strength mean of male sedentary was found to be 103.79 ± 6.85 kg. Leg strength mean of female sedentary was found to be 63.55 ± 2.70 kg, leg strength mean of male sedentary was found to be 96.50 ± 4.80 kg. Vertical jump mean of female sedentary was found to be 22.75 ± 5.24 cm, vertical jump mean of male sedentary was found to be 32.50 ± 8.46 cm. Anaerobic power mean of female sedentary was found to be 63.65 ± 3.99 kg-m/sec., anaerobic power mean of male sedentary was found to be 97.14 ± 2.28 kg-m/sec. Flexibility mean of female sedentary was found to be 23.13 ± 5.73 cm, flexibility mean of male sedentary was found to be 15.66 ± 2.09 cm.

Table 3. Comparison of parameters of male Turkish folk dancers and sedentary

Variable	Turkish Folk Dancers	Sedentary	Z	P
Age (year)	21,86	21,36	-,558	,603
Height (cm)	174,5	174,71	-,371	,734
Weight (kg)	77,07	77,21	-,231	,839
Right Handgrip Strength (kg)	41,55	39,60	-2,969	,002*
Left Handgrip Strength (kg)	39,32	38,05	-2,300	,021*
Back Strength (kg)	104,79	103,79	-,046	,982
Leg Strength (kg)	95,68	96,50	-,161	,874
Vertical jump (cm)	38,29	32,50	-3,483	,000*
Anaerobic Power (kg.m2/sec)	98,21	97,14	-,483	,635
Flexibility (cm)	15,27	15,66	-,621	,541

*p<0.05

In table 3, comparison of parameters of male Turkish folk dancers and sedentary was shown. When parameters of male Turkish folk dancers and sedentary were compared, significant differences were found in values of right and left handgrip power and vertical jump ($p<0.05$), while no significant differences were found in the other variables ($p>0.05$).

Table 4. Comparison of parameters of female Turkish folk dancers and sedentary

Variable	Turkish Folk Dancers	Sedentary	Z	P
Age (year)	21,67	21,00	-1,17	,266
Height (cm)	160,0	161,25	-,232	,843
Weight (kg)	57,42	60,42	-1,74	,089
Right Handgrip Power (kg)	30,55	28,25	-3,29	,000*
Left Handgrip Power (kg)	29,88	27,20	-3,06	,001*
Back Power (kg)	69,84	68,49	-,722	,478
Leg Power (kg)	63,73	63,55	-,058	,977
Vertical jump (cm)	28,00	22,75	-3,02	,002*
Anaerobic Power (kg.m2/sec)	84,30	63,65	-4,15	,000*
Flexibility (cm)	25,52	23,13	-1,53	,128

*p<0.05

In table 4, comparison of parameters of female Turkish folk dancers and sedentary was shown. When parameters of female Turkish folk dancers and sedentary were compared, significant differences were found in the values of right and left handgrip strength, vertical jump and anaerobic power ($p<0.05$), while no significant differences were found in the other variables ($p>0.05$).

4. Discussion and Conclusions

The aim of this study was to compare the physical fitness parameters of Turkish folk dancers and sedentary. Age mean of female Turkish folk dancers was found to be 21.67 ± 1.72 , height mean was found to be 160 ± 5.29 cm, and weight mean was found to be 57.42 ± 4.60 kg.

Age mean of male Turkish folk dancers was found to be 21.86 ± 2.07 , height mean was found to be 174.5 ± 3.39 , and weight mean was found to be 77.07 ± 3.71 kg. Age mean of female sedentary was found to be 21.00 ± 1.85 , height mean was found to be 161.25 ± 4.01 cm, and weight mean was found to be 60.42 ± 1.39 kg. Age mean of male sedentary was found to be 21.36 ± 2.02 , height mean was found to be 174.71 ± 3.44 cm, and weight mean was found to be 77.21 ± 1.49 kg.

Karacabey et al. (2008) analyzed the age, weight, and height means of Turkish folk dancers doing dances of different regions. In their study, while age mean of male Halay dancers was found to be 19.25 ± 2.34 , weight mean was found to be 72.3 ± 6.8 kg, height mean was found to be 175.0 ± 0.5 cm, age mean of male Horon dancers was found to be 20.12 ± 1.86 , weight mean was found to be 67.6 ± 1.9 , height mean was found to be 176.6 ± 0.2 . In the study that the effects of regular Turkish folk dance activities on some physical and physiological parameters were examined, Ünveren (2006) found that weight of male dancers was 65.15 ± 7.60 , body fat percentage was $11.22 \pm 1.20\%$, anaerobic power value was 105.48 ± 14.40 kg.m²/sec, leg strength was 124.08 ± 24.56 kg. Ocak and Tortop (2012) examined the effects of folk dances activities on physical fitness parameters of female folk dancers. In their study, leg strength was found to be 65.54 ± 13.81 kg, flexibility was found to be 25.17 ± 5.69 cm, right handgrip strength was found to be 27.05 ± 4.19 kg, left handgrip strength was found to be 26.15 ± 4.80 kg. In a similar study, while right handgrip strength of male Horon dancers was 40.06 ± 12.76 kg, left handgrip strength was 35.76 ± 11.15 kg, leg strength was 127.20 ± 57.30 kg, and flexibility was 22.39 ± 8.4 kg, right handgrip strength of male Zeybek dancers was 36.13 ± 10.0 kg, left handgrip strength was 35.24 ± 9.7 kg, leg strength was 120.35 ± 54.54 kg, flexibility was 21.44 ± 9.12 (Kay, 2008). Kaya (2009) examined the physical parameters of Turkish folk dancers doing dances of different regions. Kaya found that right handgrip strength of Horon dancers was 34.7 ± 5.66 kg, while right handgrip strength was 37.6 ± 5.53 (2009).

In this study, handgrip strength of male Turkish folk dancers was found to be higher than sedentary. The participants in this study do Zeybek dances. Due to the nature of Zeybek dance, the participants flick during the dance. Accordingly, this movement makes forearm muscles work and get stronger. It is possible to say that Zeybek dancers have stronger handgrip strength than other dancers doing different Turkish folk dances. While the results of Kaya (2009) support this view, the findings of Kay (2008) do not support this.

Consequently, it has been found that handgrip and vertical jump strength of Turkish folk dancers was higher than sedentary. It was expected that some physical fitness parameters of Turkish folk dancers would be higher than sedentary, because Turkish folk dancers do regular exercises. Turkish folk dances can be thought as the first step to begin sport for sedentary. Turkish folk dances including complex, regular and paced movements can contribute to development of general motor characteristics of individuals who will start sport first-time.

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