8 HAFTALIK REKREATİF BADMİNTON ANTRENMANININ KADIN ÖĞRENCİLERİN YAŞAM KALİTESİNE ETKİSİ¹

THE EFFECT OF 8-WEEK RECREATIVE BADMINTON TRAININGS ON THE LIFE QUALITY OF FEMALE STUDENTS

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Öz: Bu çalışmanın amacı; rekreatif Badminton etkinliklerinin kadın üniversite öğrencilerinin yaşam kalitesi üzerine etkisinin araştırılmasıdır. Bu araştırma, kontrol gruplu deneysel bir çalışmadır. Çalışmaya 18 ile 29 yaş grubu, Batman Üniversitesi'nde okuyan ve spor yapmayan 42 katılımcının verileri değerlendirmeye alınmıştır. Katılımcıların 21'i araştırma grubu ve 21'i de kontrol grubunu oluşturmuştur. Araştırma grubunda 8 hafta, haftada 3 gün ve günde 60 dakika kurallı Badminton oyunu uygulandı. Yaşam kalitesini belirlemek için de, egzersiz öncesi ve egzersiz sonrası tüm katılımcılara Short Form 36 (SF-36) uygulandı. Çalışmamızda; literatür ile kısmen uyumlu olarak, araştırma grubunda egzersiz sonrası BKİ değerleri, egzersiz öncesi değerlerine göre anlamlı azalma gösterdi. Araştırma grubunda; Role-Physical (ön test 66,7 ve son test 78,6) General Health (ön test 63,9 ve son test 70,7) ve Mental Health (ön test 65,7 ve son test 70,7) yönünden, antrenman sonrası veriler antrenman öncesi verilere göre önemli artış gösterdi. Diğer yaşam kalitesi alt gruplarında herhangi bir farklılık görülmedi. Rekreatif spor etkinliklerinin yaşam kalitesi üzerindeki etkisinin daha belirgin olarak görülmesi için, etkinliğin 8 haftadan daha uzun sürdürülmesi önerilir.

Anahtar Kelimeler: Rekreatif Badminton, Spor, Yaşam Kalitesi, Yetişkin Kadın

Abstract: The objective of this study is to research the effect of recreative Badminton activities on the life quality of female university students. This research is an experimental study with a control group. The data of 42 participants between the ages of 18 and 29 who study at Batman University and don't exercise was included the study. Among the participants, 21 constituted the research group while 21 of them were the control group. In the research group, regular Badminton game was applied for 8 weeks, 3 days a week and 60 minutes a day. In order to determine the life quality, all the participants were applied Short Form 36 (SF-36) prior and after exercising. Partly in line with the literature, the Body Mass Index (BMI) values after the exercises were found to be significantly lower in our study than that of prior to the exercising in the research group. In the research group, the post exercise data showed more significant increase than that of pre exercise period from the point of Role-Physical (Pre-Test 66,7 and Post-Test 78,6) General Health (Pre-Test 63,9 and Post-Test 70,7) and Mental Health (Pre-Test 65,7 and Post-Test 70,7). In the other sub-groups of life quality, no difference was observed. In order to express the effect of recreative sport activities on life quality more clearly, it is suggested to prolong the activity more than 8 weeks. The Badminton sport which easily learned and applied as a recreative activity is thought to be useful for the participation to the physical activities especially among the students at the school age and in the maintenance of the activity and this will positively affect the life quality.

Key Words: Adult Female, Life Quality, Recreative Badminton, Sport

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INTRODUCTION

The life quality is defined as the integrity of the processes such as subjective perception, emotions and cognition which is based on the self-evaluation of the individual for his own life while it is the expression of individual wellness status and consists of satisfaction expressions of the individuals about the various aspects of the life (Berterö, 2003). Researches were conducted on numerous working groups related to the life quality and at the end of the researches; the factors related to life quality were recorded as age, the history of disease, economic level, working time, the number of children, education level, marital status and physical activities (Brundtland, 2001; Kuan-Lang et al., 2005; Li et al., 2009; Kırgız et al., 2014).

There are numerous studies related to the positive effect of participating free time activities, especially active participation to them (Caldwell, 1992). It is expressed in the studies that the increase in sportive activities contributes to the self-improvement and making spiritually healthy individuals (Passmore and French, 2001). The World Health Organization estimated that the mental health disorders in the form of depression and anxiety which is gradually affecting more and more people will become one of the reasons threatening the life quality in 2020's (Brundtland, 2001). Nevertheless, regular exercising was determined to

be the most effective and economic method in the developed and developing countries (Ersoy, 2004).

The complicated and exhausting exercise programs prevent the continuity of the exercises. Through new tendencies, entertaining programs and dances were added to the exercises and some activities such as water activities, yoga, and tha chi and some themes such as fire brigade, detective, commando, superman etc. were also included. One of the alternative sports is Badminton because its equipment's can be obtained easily and cheaply, it is not limited to children and it can be played at every age and it is conducted to satisfy the need of individuals for community health care and activity. It draws great attention since it doesn't employ violence and it is enjoyable to watch. Since it belongs to the family of tennis game, there is a net between the players; thus, everybody plays in a field allocated for him and its ball (shuttlecock) is rather harmless. For that reason, it is one of the activities with the lowest risk of injuries or mutilation (Wikipedia, 2014). The Badminton sport is an Olympic game which requires moving fast; highly alactic anaerobic and slightly lactic anaerobic and aerobic metabolism is on charge since it takes much time (Cabello and Gonzalez, 2003).

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MATERIAL and METHODS

Participants

This research is an experimental study with control group. 50 sedentary female university students between the ages of 18 and 29, studying at Batman University and who don't play any sports participated to the study. The participants were randomly divided into two groups with 25 members each. However, the data of research (Badminton) group with 21 members and control group with 21 members with a total of 42 participants was evaluated after those who don't attend the trainings and miss the final measurements are excluded. All the participants declared that they hadn't any permanent diseases. Before the measurements and training practices are conducted, all the participants filled and signed the "Informative Voluntary Consent Form".

Pre-Test and Post-Test Measurements

All the participants were applied Pre-Test measurements 2 days before starting the trainings, the participants filled the personal information form and Short Form 36 (SF-36). Two days after the Badminton trainings of 8 weeks, the Post-Test measurements were made and the participants filled SF-36. The linear measurement was conducted through milimetric height the scale while the weight was measured through an electronic bascule and recorded in kg.

Short Form 36 (SF-36)

In order to determine the life quality, the SF-36 questionnaire form which consists of 36 questions was applied. (Ware and Sherbourne, 1992). The activities for reliability and validity of the Turkish version of SF-36 were conducted by Koçyiğit et al. (1999). The questionnaire scorings, the questionnaire data were obtained through accessing the related internet pages. The results were recorded in 8 sub-groups (Physical Functioning, Role-Physical, Bodily Pain, General Health, Vitality, Social Functioning, Role-Emotional, and Mental Health) and 2 abstract scores (Physical Health Summary and Mental Health Summary) (Sf-36.org, 2014).

Recreative Badminton Training

The training activity were conducted for 3 days a week and for 8 weeks. The trainings were executed in the form of active technical training for the first 4 weeks and the final 4 weeks were spent on reciprocal match games. Each technique which is taught was consolidated through reciprocal activities and was made entertaining through games and setting goals. The matching activities were executed through matching all the sportswomen with each other by turns. Prior to the training, warm up for 10 minutes, main practice for 60 minutes and 5 minutes of cooling exercises

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were conducted. Extreme fatigue wasn't allowed in the training activities.

Statistical Analysis

During the intra-group comparison of the Pre-Test and Post-Test, paired samples t-test was employed while independent samples-test was used for the intergroup comparisons. In the tests, the value $P < 0,05$ was accepted statistically significant. In the statistical table,

the arithmetical averages of the data of the groups, their standard deviations, t-test and P values were given.

FINDINGS

It was found that there was no statistical difference between the averages of age in the groups (research group $20,76 \pm 2,90$ and control group $20,95 \pm 3,29$) ($P > 0,05$).

Table 1. Comparison of the data of Pre-Test and Post-Test related to the Body Mass Index (BMI) and Life Quality Levels of Badminton (research) Group and Control Group

Variants		Badminton Group $\bar{X} \pm Sd$	Control Group $\bar{X} \pm Sd$	t-test / P-value
BMI (kg/m ²)	Pre-Test	23,9 $\pm$ 3,7	23,0 $\pm$ 2,7	,919/,364
	Post-Test	23,5 $\pm$ 3,4	23,2 $\pm$ 2,8	,259/,797
	t-test / P-value	4,638 / ,000**	-2,977 / ,009**	-
Physical Functioning	Pre-Test	82,1 $\pm$ 14,4	80,0 $\pm$ 22,4	,369/,714
	Post-Test	84,8 $\pm$ 13,1	78,3 $\pm$ 18,9	1,280/,208
	t-test / P-value	-,879 / ,390	,791 / ,438	-
Role-Physical	Pre-Test	66,7 $\pm$ 24,2	65,5 $\pm$ 34,9	,129/,898
	Post-Test	78,6 $\pm$ 19,8	57,1 $\pm$ 39,6	2,216/,032*
	t-test / P-value	-2,351 / ,029*	1,581 / ,130	-
Bodily Pain	Pre-Test	69,4 $\pm$ 18,4	64,6 $\pm$ 20,4	,801/,428
	Post-Test	73,3 $\pm$ 20,0	63,5 $\pm$ 22,8	1,475/,148
	t-test / P-value	-1,200 / ,244	,317 / ,755	-
General Health	Pre-Test	63,9 $\pm$ 16,0	69,1 $\pm$ 18,2	-,981/,332
	Post-Test	70,7 $\pm$ 17,0	65,3 $\pm$ 20,1	,937/,354
	t-test / P-value	-2,099 / ,049*	1,427 / ,169	-

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Vitality	Pre-Test	66,4±19,1	52,9±20,8	2,200/,034
	Post-Test	71,0±18,0	51,0±22,0	3,224/,003*
	t-test / P-value	-1,914 / ,070	1,191 / ,248	-
Social Functioning	Pre-Test	70,8±21,0	59,5±24,3	1,611/,115
	Post-Test	70,8±19,9	61,3±23,4	1,423/,163
	t-test / P-value	,000 / 1,000	-,826 / ,419	-
Role-Emotional	Pre-Test	55,6±40,0	46,0±38,7	,785/,437
	Post-Test	60,3±38,9	44,5±38,5	1,329/,191
	t-test / P-value	-,679 / ,505	,566 / ,578	-
Mental Health	Pre-Test	65,7±13,8	54,1±17,8	2,367/,023
	Post-Test	70,7±12,4	54,3±19,0	3,313/,002**
	t-test / P-value	-2,210 / ,039*	-,116 / ,909	-
Physical Health Summary	Pre-Test	48,9±5,83	50,2±6,5	-,683/,499
	Post-Test	51,2±6,0	48,5±7,0	1,350/,185
	t-test / P-value	-1,890 / ,073	1,386 / ,181	-
Mental Health Summary	Pre-Test	44,3±8,8	37,5±12,0	2,117/,041
	Post-Test	45,9±7,0	37,8±11,7	2,703/,010*
	t-test / P-value	-1,075 / ,295	-,504 / ,620	-

*: P<0,05 **: P<0,01 it expresses the significance of the Pre-Test/Post-Test averages between the group in the same line and intra-groups in the same column.

When the Table 1 is analyzed, it was determined in both Pre-Test and Post-Test measurements that there was no statistical difference between Badminton group and control group from the point of BMI and life quality sub-groups (P>0,05). Moreover, no statistical difference was obtained between the Post-

Test data of Badminton group and the control group from the point of BMI (P>0,05).

In the comparison of the Pre-Test data and Post-Test data of Badminton group (intra-group), a significant decrease was observed in BMI values (P<0,01). In the comparison of the Pre-Test data and Post-Test data of Control group (intergroup), there was a significant increase in BMI values (P<0,05).

In the Badminton group, the data for the post-exercise from the point of Role-Physical (Pre-Test 66,7 and Post-Test 78,6) General

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Health (Pre-Test 63,9 and Post-Test 70,7) and Mental Health (Pre-Test 65,7 and Post-Test 70,7) was found higher than the data of pre-exercise period ($P<0,05$). In the control group no difference was obtained between the data of Pre-Test and that of Post-Test from the point of sub-groups of life quality ($P>0,05$).

Moreover, the intergroup Post-Test data was analyzed. The Role-Physical values of Badminton group was found higher than the sedentary group (78,6 and 57,1 respectively) ($P<0,05$). According to the Vitality variant, the values of Badminton group was found higher than the sedentary group (71,0 and 51,0) ($P<0,05$). According to the Mental Health variant, the values of the Badminton group was found higher than the sedentary group (70,7 and 54,3) ($P<0,01$). According to the Physical Health Summary variant, no statistical difference was found between the groups ($P>0,05$) while the values of Badminton group was found higher than the sedentary group according to the variant of Mental Health Summary (45,9 and 37,8) ($P<0,05$).

DISCUSSION

In the research conducted on randomly chosen 131 males and females, the subjects were divided into two groups such as experimental group and control group and it was recorded after the exercise program of 16 months after the executed Pre-Tests that the BMI values in

exercise group decreased. Without conducting a dietary program, the moderate physical activities planned as 150-250 minutes a week prevents the increase of body weight in most adults and even may lead to decreases in body weight. However, achieving more weight requires increasing the duration of moderate exercises (Donelley et al., 2003).

In line with the information above obtained from our study, the BMI values of research group after the exercises showed a significant decrease when compared to the values before the exercises. However, the lacking of differences between the research group and control group reminds us that the exercises period of 8 weeks is not sufficient.

University students reported that there was a positive relationship between exercises and life quality (Li et al., 2009). In a research which the life quality of the adult sportsmen and sedentary are compared, physical health scores of the sportsmen and their mental health scores were found 53,2 and 49,6, respectively, while physical health scores of the nonathletic individuals and their mental health scores were found as 53,3 and 46,6 (Snyder et al., 2010). In New Zealand, the average scores of the participants as a result of life quality scale which was applied to the general population over the age of 15 is as follows; Physical Functioning 86, Physical Role 80,7, Pain 77,9, General Health Percep-

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tion, 73,8, Vitality 65,6, Social Functioning 86,6, Mental Role 85, and Mental Health, 78. In the study, all the parameters except General Health Perception employ higher scores for males (Scott et al., 1999). In a research conducted on adults in Columbia, the relationships between physical activities of individuals and their life quality was analyzed and a positive relationship was observed only between walking physical activities and the life quality (Blacklock et al., 2007). In a research conducted on white-collar in Turkey, the relationships between physical activities of individuals and their life quality was analyzed and no relationship was observed between physical activities and the life quality (Vural et al., 2010).

Partly in line with the data of research above, following results were obtained in our study; Role-Physical (Pre-Test 66,7 and Post-Test 78,6) General Health (Pre-Test 63,9 and Post-Test 70,7) and Mental Health (Pre-Test 65,7 and Post-Test 70,7). Accordingly, the data for the post-training period was found higher than that of pre-training period. The intergroup data of Post-Test period is compared; the values of Badminton group were found higher than the control group from the point of the variants of Role-Physical, Vitality and Mental Health. When the abstract scores of Short Form 36 test is analyzed, no statistical difference was found between the groups

from the point of Physical Health Summary variant while the values of Badminton group were found higher than those of control group from the point of the Mental Health Summary variant.

CONCLUSION

When the results of our study is analyzed in whole, it can be stated that recreative Badminton sport has positive effects on mental health elements rather than physical health elements. However, it can be concluded that training of 8 weeks isn't enough for exercising to provide significant changes and the exercises with longer periods can yield to better results.

The Badminton sport which can be easily learned and applied as a recreative activity is thought to be useful especially for students in the school ages for their participation to the regular exercises and sustaining the activity.

Moreover, it is assumed that the data obtained in the study will constitute a scientific basis for the comparison of the weight levels and healthy life quality levels of sedentary group and adult females executing physical activities and will provide contribution to the literature of sports and health.

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