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INVESTIGATION OF THE EFFECT OF WRESTLING TRAINING ON DEPRESSION LEVELS OF CHILDREN BETWEEN THE AGES OF 11-14 [1]

11-14 YAŞ ARASI ÇOCUKLARDA GÜREŞ EĞİTİMİNİN DEPRESYON DÜZEYİNE ETKİSİNİN İNCELENMESİ

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Öz: Bu araştırmanın amacı, 8 hafta süre ile düzenli olarak uygulanan güreş eğitiminin, çocukların depresyon düzeyleri üzerinde etkisinin olup olmadığının araştırılmasıdır. Araştırma grubu, Ankara Sincan Ahi Evran Ortaokulu ile Eryaman Cumhuriyet Ortaokulu'nda öğrenim gören 11-14 yaş aralığındaki 210 öğrenciden oluşmaktadır. Araştırma ön test – son test kontrol gruplu deneme modelinde desenlenmiştir. Araştırmada veri toplama aracı olarak "Çocuklar İçin Depresyon Ölçeği" (Kovacs, 1981) kullanılmıştır. Uygulama grubu öğrencilerine 8 hafta boyunca, haftada 3 gün 2 saatlik düzenli olarak güreş eğitimi verilmiştir. Verilerin istatistiğinde SPSS 15.0 paket programından yararlanılmış, karşılaştırmalarda Wilcoxon ve Mann-Whitney U testlerine başvurulmuştur. Bu araştırma, 0.05 anlamlılık düzeyinde test edilmiştir. Araştırmaya uygulama grubu olarak katılan öğrencilerin ön test – son test depresyon puan ortalamalarının karşılaştırılmasında, istatistiksel olarak anlamlı bir farklılık olduğu tespit edilmiştir ($p<0,05$). Bu bağlamda, düzenli olarak katılım gösterilen güreş eğitiminin, çocukların depresyon düzeyleri üzerinde olumlu bir etkiye sahip olduğu söylenebilir.

Anahtar Kelimeler: Spor, Güreş, Çocuk, Depresyon, Eğitim

Abstract: The aim of this research was to investigate whether wrestling training for 8 weeks has an effect on depression levels of children or not. The research group was constituted of 210 students in the range of 11-14 years old who take education in Ankara Sincan Ahi Evran Secondary School with Eryaman Cumhuriyet Secondary School. The research was designed as a test-module with pretest-posttest control group. In the research, "Depression Scale for Children" (Kovacs, 1981) was used as data collecting tools. Regular wrestling training was given to the students in application group for 2 hour 3 days a week throughout 8 weeks. For statistical analysis of the data, SPSS 15.0 software program was used whereas Wilcoxon and Mann-Whitney U tests were applied for comparisons. This research was tested for 0.05 significance levels. It was determined that there was a significant difference in terms of statistics when averages of pre-test and post-test grades of students participated in the research as application group ($p<0.05$). In this regard, it can be concluded that wrestling training with regular participation will have a positive effect on depression levels of children.

Key Words: Sports, Wrestling, Child, Depression, Education

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INTRODUCTION

Nowadays, it is considered that many mental disorders in adults might be originated from several negativities experienced in childhood. The feelings, ideas or situations which are lived in childhood and are not overcome, give stress and annoy the individual might cause various mental disorders particularly depression. It was determined by the researches that depressive situations might be seen due to various reasons in children and this resulted in displaying negative behaviours by children (Erdoğdu, 2012). Depression in children, as this is the case in adults, is a mental disorder which affects development and performance and if it is not treated, might cause serious results (Arslan et al., 2011). These depressive situations affect the school life of children negatively and weakens their social relations (Yorgancı, 2006).

For growing healthy generations, the mental structure of children should be good and this goodness should be protected (Bayraktar, 2011). For this reason, the mental disorders in children who will be the adults of the future should be considered as early as primary school level (İlhan and Gencer, 2010) and these depressive signs should be certainly treated in order for the children to survive a healthy life in terms of spirit, body and mental. Sports is one of the most effective methods that might support this treatment (Arslan et al., 2011).

Sports is an important social relation tool that meets the need of being a member of a group for children. Threatening sense of belonging leads to negative emotional effects such as anxiety, aggression, loneliness, low self respect as well as depression (Medora et al., 1987; Asher and Paquette, 2003; Twenge et al., 2003). Sports and physical activities have positive effect on self-respect, concern, behavioural problems and depression of children (Ekeland et al., 2005; Karakaya, et al., 2006; İkizler, 2002). It was indicated in the researches that physical activities and sports decreased depression or the symptoms of depression tendency (Yarımkaya et al., 2015; Durstine et al., 2009), provided improvement in social relationships (Mülayim, 2014; Arslanoglu et al., 2013; Can et al., 2014) and supported self-confidence development (Yarımkaya et al., 2014; Solish et al., 2010).

Wrestling education, which was considered as an independent variable in the research, is an easy and enjoyable branch of sports in addition to its property of being among the most liked sports branches for children and youth with its psychological, social, physical and pedagogic esteems. In most of the countries all over the world, wrestling has been an irrevocable factor of basic education in schools and clubs (Gökdemir, 2000). From this point of view, the effect of wrestling education on the depression levels of children between 11-14 years old in terms of added values for children is the main subject of

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our research. In this regard, the purpose of this research was to investigate whether the wrestling education had any effects on the depression levels of children or not.

METHOD

In this section, there are titles related with the design of the research group, data collecting tool and analysis of the data.

Research Design

The research was designed as test model with pre-test post-test control group. In this model which is one of the three test models having the highest scientific value, more than one group is used and the groups are formed via unbiased assessment approach. Within this approach, two groups are formed as application and control groups (Karasar, 2014). An independent variable is applied to one of these groups (application group) and it is accepted that it is caused by independent variable if post-test grades are higher than pre-test grades (Ekici, 2008). Within the scope of the research, independent variable applied to application group was "Wrestling Education Program".

Research Group

The research was carried out in 2013-2014 education year. 210 students (application group n: 105, control group n: 105) who were getting education in Ankara Sincan Ahi Evran Secondary School and Eryaman Cumhuriyet Secondary School between 11-14 years old were selected by random sampling method and participated in the research. The results of data collecting tool applied to students (Depression Scale for Children) were evaluated and application as well as control groups were formed consisting of 105 children in each via unbiased assessment method. The criteria for the determination of application and control groups was to form two groups having the closest properties and being equal in number.

Data Collecting Tools

"Depression Scale for Children (DSC)" was used as a data collecting tool in this research. "Depression Scale for Children" was developed by Kovacs (1981) and is a self-report measure that can be applied to children between 6-17 years old. In the scale consisting of 27 items, there are three different choices for each item. For example; 1. I occasionally feel sad. 2. I often feel sad. 3. I always feel sad. Each item takes 0, 1 and 2 points according to the influence of the indication. Higher the taken points, harder becomes the depression. Critical point was suggested as 19. The validity and reliability studies were carried out in our country and pathological critical point was determined as 19 (Oy, 1991). For test retest reliability of the scale, it was applied to a group of 380 students every other week and r was found as 0.80. For the validity of the scale, interviews related with depression were performed with 59 students and Childhood Depression Rating Scale was applied. As a result, sensitivity of

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the scale was 60.00% (n=6), its specificity was 95.92% (n=47), its false negative rate was found as 40.00% (n=4), its false positive rate was 4.08% (n=2) and its intrinsic accuracy rate was determined as 89.83% (n=5). For these children it was found that there was a relationship of r=0.61 between the grades of Depression Scale for Children and Childhood Depression Rating Scale (Savaşır & Şahin, 1997). Within the scope of this research, Cronbach Alpha internal consistency coefficient was found as 0.80 among performed reliability analysis.

Wrestling Education Program

For the application group, an education program based on warm-up, exercises and technical studies specific to wrestling sports, sportive games as well as stretching and cooling exercises in 3 days a week for two hours a day. The program was prepared according to the opinions and approvals of three different academicians who were specialists in Physical Education and Sports as well as Child Development. Wrestling education program was applied by 3rd degree wrestling coaches. The program was continued for 8 weeks. The education was carried out in indoor sports halls of schools.

In wrestling education program, as a detailed content, information about description of wrestling sports and its history was given to application group that was getting wrestling education at the stage of information and then wrestling materials were introduced. Before education program, warm-up exercises (running, arm and waist circling, etc.) were applied to the application group for 15 minutes. In order for students to learn the rolls (forward roll, backward roll, somersault, hoop, walk over, arm stand, picked roll) which are warm-up exercises for students in wrestling sports and to use them during warm-up, these actions were presented to them practically. These actions were done by students with the support of equipments when they had difficulty in doing.

Basic stance positions which are beginner level in wrestling were displayed for students and they were desired to determine and apply whichever was appropriate for themselves. Holding positions in wrestling sports were displayed, the students were desired to apply them and styles of holding were displayed with examples practically in order for them to comprehend better and let them to make holdings by help. During wrestling education, the students were let for 15 minutes to apply stretching actions (arm, wrist, leg, neck, hand, waist) better.

Process

In the first stage of this research, the required permissions were taken from the families of children, Ankara Provincial Directorate for National Education and the management of the school where the research would be carried out. In the second stage, the families were informed

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about the aim and content of the research and the research group (application group n: 105 and control group n: 105) was determined by the researcher. In the third stage, pre-test was applied to the research group. In the fourth stage, wrestling activities were performed with application group for 8 weeks including 3 days a week resulting in totally 24 sessions. In this period, control group did not participate in any of these activities. In the fifth stage, post-test was applied to the research group after 8-week sports activities program. The period of process is given in table 1.

Table 1. Period of Process

Group	Pre-test	Wrestling Training (8 weeks)	Post-test
Application	Depression scale was applied	Wrestling activities were applied	Depression scale was applied
Control	Depression scale was applied	Participants did not attend in any of physical activities	Depression scale was applied

Analysis of Data

For the evaluation of the data and for finding the calculated values, SPSS 15.0 statistical software program was used. The data were summarized by giving percentage and frequency tables. Whether the data indicated normal distribution or not was tested by One-Sample Kolmogorov-Smirnov test and it was determined that the data did not indicate normal distribution. Since the data did not indicate normal distribution, Wilcoxon and Mann-Whitney U tests at the non-parametric level were used for the determination of difference between groups. The level of error was taken as 0.05 in this research.

FINDINGS

In this section, the findings obtained as a result of statistical operations carried out with the data of this research are given.

Table 2. Comparison of Pre-test Depression Grade Averages of Students in Application Group

Variable	Group	N	Mean rank	Sum of rank	Sd	U	p
Pre-test	Application	105	100.95	10599.50	208	5034.50	0.277
	Control	105	110.05	11555.50			

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Before wrestling education program, it was indicated that there was no significant difference between groups when depression pre-test grade averages of application and control groups were compared (U=5034.50, p>0.05).

Table 3. Comparison of Post-Test Depression Grade Averages of Students in Application Group

Variable	Group	N	Mean rank	Sum of rank	Sd	U	p
Post-test	Application	105	96,.80	10163.50			
	Control	105	114.20	11991.50	208	4598.5	0.038*

***(p<0.05)**

After application of wrestling education program, a significant difference was determined between groups when depression post-test grade averages of application and control groups were compared (U=4598.50, p<0.05).

Table 4. Comparison of Pre-Test and Post-Test Depression Grade Averages of Students in Application Group

Group	Post-Test-Pre- Test	N	Mean rank	Sum of rank	Z	p
Application	Negative rank	48	42.47	2038.50	2.277	0.023*
	Positive rank	31	36.18	1121.50		
	Equal	26	-	-		

***(p<0.05)**

When pre-test and post-test depression grade averages of application group were compared, it was determined that there was a significant difference between pre-test and post-test values of application group (Z=2.277, p<0.05).

Table 5. Comparison of Pre-Test and Post-Test Depression Grade Averages of Students in Control Group

Group	Post-Test-Pre- Test	N	Mean rank	Sum of rank	Z	p
Control	Negative rank	31	42.76	1325.50	0.534	0.593
	Positive rank	44	34.65	1524.50		
	Equal	30	-	-		

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When pre-test and post-test depression grade averages of control group were compared, it was determined that a significant difference was not found between pre-test and post-test values of control group (Z=0.534, p>0.05).

RESULTS and DISCUSSION

In this research which was carried out to investigate the effect of wrestling education on depression levels of children between 11-14 years old, 210 male students (application group n: 105 and control group n: 105) getting education in Ankara Sincan Ahi Evran Secondary School and Eryaman Cumhuriyet Secondary School participated. In the light of these findings; before wrestling education program, it was indicated that there was no significant difference between groups (U=5034.50, p>0,05) when depression pre-test grade averages of application and control groups were compared. Pre-test values of both application and control groups showed similarity (Table 2).

After application of wrestling education program, a significant difference was determined between groups when depression post-test grade averages of application and control groups were compared (U=4598.50, p<0.05). It was observed that the significant difference between post-test values of application and control groups was in favour of application group (Table 3). It was considered in terms of depression level after wrestling education program that this significant difference observed between application and control groups which was in favour of application group was resulted from regularly applied wrestling education. The studies in literature indicated that exercise can be used directly and complementarily for the treatment of depression, exercise was a support to take depression under control and to prevent it as well as exercise was as effective as meditation for the treatment of depression (Biddle and Mutrie, 2001; Lawlor and Hapkor, 2001; McAuley et al., 2003; Dunn et al., 2005).

When pre-test and post-test depression grade averages of application group were compared, it was determined that there was a significant difference between pre-test and post-test values of application group (Z=2.277, p<0.05). In this comparison, post-test depression grades were decreased more significantly than pre-test depression grades (Table 4). The contribution of wrestling education for this result was presented as a result of our findings. Contrary to this, when pre-test and post-test depression grade averages of control group were compared, it was determined that a significant difference was not found between pre-test and post-test values of control group who did not participate in any activities during wrestling education (Z=0.534, p>0.05) (Table 5).

In the study of Arslan et al., (2011), it was stated that depression levels of primary school students doing exercises were lower than those of students not doing exercises. It was determined by Akan-

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dere and Serdengecti (2003) that a significant difference was found in favour of university students doing exercises when depression levels of university students doing and not doing exercises were compared. In the study of Koruç and Bayar (2004), it was stated that exercise might have an effect on disorders such as depression and anxiety as well as negative emotions and moods occurred as a result of depression can be eased and changed as liveable by means of exercise. In the study of Şenduran (2008), it was expressed that the students doing exercises were more in compliance with themselves and with their environment than those who were not doing exercises, were loved by their environment and they were at peace with themselves.

Karadağ (2008) presented in his study performed with the students staying at orphanage that the children dealing with sports had a decreased rate of using harmful substances, they had improved life quality and their depression grades were lower than those who were not dealing with sports. It was determined by Tekin et al., (2009) that physical exercises done in spare time was an important variable in decreasing the depression level of university students. These researches indicated that sports positively affect depression level of children and this result is in accordance with the findings of this research related with "wrestling education positively affected depression levels. Consequently, in this research which was carried out to investigate whether wrestling education had an effect on depression levels of children or not, it was determined that 8-week wrestling education program performed with application group students (n:105) resulted in a significant effect on depression levels of children. In this regard, it can be concluded that wrestling education has a positive effect on depression levels of children.

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EXAMINING THE EFFECTS OF 8-WEEK ZUMBA AND STEP-AEROBIC EXERCISES ON HEALTH-RELATED PHYSICAL FITNESS FACTORS IN WOMEN[1]

KADINLARA UYGULANAN 8 HAFTALIK ZUMBA VE STEP-AEROBİK EGZERSİZLERİNİN SAĞLIK İLİŞKİLİ FİZİKSEL UYGUNLUK UNSURLARINA ETKİSİNİN ARAŞTIRILMASI

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Öz: Bu çalışma bayanlara uygulanan 8 haftalık zumba ve step aerobik egzersizlerinin sağlık ilişkili fiziksel uygunluk unsurları, kan basıncı ve dinlenik kalp atım sayısına olan etkisini incelemek amacıyla yapılmıştır. Çalışmaya, 60 kadın gönüllü olarak katılmıştır. Araştırmaya katılan kadınlar, zumba grubu, step-aerobik ve kontrol grubu olmak üzere, rastgele 3 farklı gruba ayrılmıştır. Zumba ve step aerobik gruplarına egzersiz, 8 hafta boyunca haftada 3 gün, 60 dakika süreli olmak üzere uygulanmıştır. Grupların ön ve son test değerlerinin karşılaştırılmasında Paired t testi kullanılmıştır. Verilerin çözümlenmesi sonucunda; zumba ve step-aerobik gruplarının ön ve son testleri arasında vücut ağırlığı, esneklik, MakVO2, bacak kuvveti, sırt kuvveti ve vücut yağ oranı değerlerinde anlamlı fark bulunmuştur ($p<0.05$). Ayrıca step-aerobik grubunun sağ ve sol el kavrama kuvvetlerinin ön ve son testlerinde de anlamlı farka rastlanmıştır ($p<0.05$). Her iki egzersiz grubunun kan basıncı ve dinlenik kalp atımı sayısı değişkenlerinde anlamlı farka rastlanmamıştır ($p>0.05$). Sonuç olarak; 8 haftalık zumba ve step aerobik egzersizlerinin sağlık ilişkili fiziksel uygunluk unsurlarına olumlu yönde etkilediği ancak kan basıncı ve dinlenik kalp atım sayısını anlamlı olarak etkilemediği ortaya çıkmıştır.

Anahtar Kelimeler: Egzersiz, Fiziksel Uygunluk, Kadın, Step-Aerobik, Zumba

Abstract: This study has been carried out to examine the effects of 8-week Zumba and Step-Aerobics exercises on the health-related physical fitness components, blood pressure and resting heart rate. 60 woman volunteers participated in this study. The women participating in the study were randomized into 3 different groups as the Zumba Group, the Step-Aerobics Group, and the Control Group. The exercises were applied to the Zumba Group and to the Step-Aerobics Group for 8 weeks, 3 days a week for 60 minutes. Paired t Test was used for the comparisons of the pre and post-test values of groups. Upon the analysis of the data, it was observed that there was a difference between the pre and post-tests of the Zumba and the Step-Aerobics Groups in terms of body weight, flexibility, MaxV02, leg strength, back strength, and body fat percentage ($p<0.05$). Moreover, there was a significant difference in the pre and post-tests of the Step-Aerobics Group in terms of the right and left hand grip strengths ($p<0.05$). There was not a significant difference between the two groups in terms of the blood pressure and the resting heart rate variables ($p>0.05$). As a consequence, it was concluded that 8-week Zumba and Step-Aerobics exercises affected the physical fitness factors positively; however, it was also concluded that these exercises did not affect the blood pressure and the heart rate at a significant rate.

Key Words: Exercise, Physical Fitness, Women, Step-Aerobic, Zumba

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INTRODUCTION

Sedentary lifestyle leads to hypertension, obesity, muscle weakness, postural deficiency, diabetes, coronary heart disease, and threatens the health of the individuals (Adnan et al., 2012: 428), and also affects the life quality of people for the forthcoming years (Raju, 2014: 51). It is a widely-known fact that physical activity performed in proper intensity and with proper frequency constitute an important part of the healthy lifestyle (Sedenkova et al., 2012: 55), improve physical fitness (Drobnik-Kozakiewicz et al., 2013:3), and prevent the development and progression of the diseases that stem from inactivity. Based on this fact, a number of physical fitness programs have been developed in order to attract the attention of the individuals, and make them adopt the habit of exercising (Kin et al., 1996: 23-24). These exercise programs include the dance activities that are preferred by women for functional abilities (like increasing the aerobic endurance), morphological properties (weight and body fat loss), for health (Nikic and Milenkovic, 2013: 26), and for the purpose of staying fit and healthy and having a quality life. Dancing is a type of specific exercise at the aerobic level and is physical activity that involves the functional, motor and musical skills in which the major muscle groups are involved. It is also recommended to protect the muscular tonus, the coordination and the relevant skills (Kostic et al., 1999: 15; Sofianidis et al., 2009: 168). Zumba and Step Aerobics are the most popular collective activities among the aerobic exercises (Drobnik-Kozakiewicz et al., 2013: 4; Luettgen et al., 2012: 357).

Fitness group exercises represent the programmed activities that are intended to regulate the body shape and live in a healthier life (Ljubojevic et al., 2014: 29). The most popular of these activities is Zumba, which appeared as a fitness concept in mid-1990s in Colombia (Luettgen et al., 2012: 357). Zumba includes the basic steps of the merengue, salsa, samba, rumba, cha-cha, and other Latin dances, and consists of the combination of the exercises that constitute the basis of basic aerobics, resistance, interval training that play a great role in developing the components of fitness, balance, agility, flexibility, and correcting the body posture. It also increases the burning of the calorie in the body, strengthens the heart muscle, lowers the resting heart rate, regulates blood pressure, elevates the metabolism (Perez and Greenwood-Robinson, 2009: 3-15), and improves and maintains cardiorespiratory fitness (Dalleck et al., 2015: 690)

Step-Aerobics, which is another popular exercise type, is an activity that plays an important role in improving the cardiovascular fitness, physical health, and body composition by adapting the movements to the music played by using a step platform, and consists of opening-stretching activities in a tempo. It promotes exercising in an enjoyable manner accompanied by music by making the movements to the front, next to,

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behind and across the platform (Kurt et al., 2010: 668; Ossanloo et al., 2012: 3668).

When the literature is examined, it is observed that although there are a number of studies that deal with the effect of regular exercises (Colakoglu and Karacan, 2006: 35; Sedenkova et al., 2012: 55; Hosiso et al., 2013:1), and step-aerobics exercises (Altunoz, 2010: 50) on health-related physical fitness parameters of women, However there are very few studies conducted on the potential fitness benefits of Zumba despite its spreading popularity (Luettgen et al., 2012: 357). These studies are mostly conducted on the decrease in the body fat percentages of women with Zumba fitness exercises (Barene et al., 2014: 990; Ljubojevic et al., 2014: 29). In this study, the effects of 8-week Zumba and Step-Aerobics exercises on health-related physical fitness factors (flexibility, aerobic fitness, muscle strength and endurance, body composition), blood pressure (systolic, diastolic), and resting heart rate were examined, and the issue of which of these dancing exercises (Step-Aerobic and Zumba) are more influential on these health-related parameters.

METHOD

The Participants: This is an empirical study of 60 woman volunteers, who did not do regular exercises and did not have any illnesses or sports injuries, participated in this study. All participants signed an informed consent form. The women who participated in the study were randomized into 3 groups as The Zumba Group (n=20, average age: 21.30± 2.29 years); the Step-Aerobic Group (n=20, age: 20.60 ±1.42 years); and the Control Group (n=20, age: 21.55 ±1.90 years). The Zumba and the Step Aerobics Groups received the exercises for 8 weeks, 3 days a week, and for 60 minutes on non-consecutive days and were led by a certified instructor. The women in the Control Group were not subjected to any exercise programs. All the measurements and tests that were applied to the Study Group were made twice; the first one, two days before the exercise program started; and the second one, two days after the program ended

The Zumba Exercises: A choreography consisting of complicated movements accompanied by various dance music were applied to the Study Group 3 days a week, at a grade of 50-60% of the targeted heart rate (calculated to Karvonen formula) for 60 minutes (including the warm-up and cooling) as the Zumba Exercise (Kurt et al., 2010: 668; Ljubojevic et al., 2014; 30 Narrt. from Lukic, 2006 by Ljubojevic et al., 2014: 30). This application consists of 8-10 Zumba Music, each music lasting 3-5 minutes. The exercises were applied with 15-30 seconds of interval for relaxation (Ljubojevic et al., 2014: 30).

The Step-Aerobic Exercises: The Step-Aerobic Exercises: A Step-Aerobic dance exercise program was applied to the Study Group at a grade

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of 50-60% of the targeted heart rate (Kurt et al., 2010: 668) for 60 minutes (including the warm-up and cooling). The program was modified by the Author of the Study (Table 1)

The Intensity of the Exercise: To determine the intensity of the exercise, the Karvonen formula was used (Zorba and Saygin, 2013: 102).

*The music for the sessions was selected by the Author so as to make the women use their 50-60% of their heart rate reserves with the rhythm in the music (Kin et al., 1996: 26).

Table 1. Sample Zumba and Step-Aerobic Exercise Programs

	Zumba	Step-Aerobic
Warm-up (10-15 minutes)	Flexibility movements (simple dance steps with the increasing music, marching, steps, walking side-by-side)	Flexibility movements
Main Part (40-45 minutes)	The choreography consisting of complicated movements accompanied by the music used for Salsa, Merengue,	4x8 Simple steps marching 4x8 Single step front/back 8 repetition-pull the knee 8 repetition-pull the ankle 8 repetition-open the legs side/back 8 repetition-three repetitive knee pull/pull the ankle 8 repetition walk to the corner from the corner 4x8 single step front/back 4x8 marching
Cooling (10-15 minutes)	Dance accompanied by light music, stretching movements. No jumping or squats were allowed. The movements were made in sitting, lying, and standing position.	Flexibility movements

Data Collection Tools

Body Weight and Height: The weights were measured with a scale of 0.01 kg sensitivity, the heights were measured with a digital stadiometer with 0.01 cm sensitivity. The data were written on the information form as centimeter and kilogram (Gunay et al., 2013: 580).

Sit and Reach Test: The flexibility measurements of the participants were made with the Sit-Reach Test. The tests were carried out with tripod located 0-50 cm above the upper surface of mea-

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surement table. (length of 35 cm, a width of 45 cm, a height of 32 cm, the surface length of 55 cm). In addition, 3 to 5 minute warm-up exercises were performed by subjects before starting the test. The test was repeated twice, and the best result was accepted as the flexibility value (Gunay et al., 2013: 464).

20-Meter Shuttle Run Test: The Shuttle Run Test for 20 meters was used in order to estimate the aerobic fitness of the participants ($MaxVO_2$). The 20-meter shuttle run test followed previously explained protocols where participants ran back and forth between two lines set 20 m. apart. According to the results obtained, the $max.VO_2$ value was estimated as ml/kg/min. (Gunay et al., 2013; 537-538; Leger et al., 1982: 2).

Measuring the Leg and Back Strenght: The test was performed by using the 23527-3 Brand Backlift dynamometer produced by Lafeyette Instrument Company. During the measurements, the participants were asked to apply maximum strenght to their legs and backs and pull the chain of the dynamometer upwards. After a warming-up for 3-5 minutes, the test was repeated for 3 times. The best results were recorded (Gonulates et al., 2010: 963).

Measuring the Hand Grip Strenght: The measurement was performed by using a Takkei brand hand dynamometer. After a 5-minute warm-up, the measurement was made while the subject was standing without bending the arm on which the measurement was made, and without contacting it with the body. This situation was repeated twice for the dominant hand. The best value was recorded (Gunay et al., 2013; 454; Vancampfort et al., 2012: 417).

Body Composition: In order to determine the body composition, the Skinfold Method was used.

The Skinfold Method: In the Skinfold Method, the Holtain Skinfold Kaliper, which applied 10 g/sq mm pressure in every angle was used. Durning and Womersley (1974) formula was used in order to measure the body fat percentage of the subjects with the triceps, biceps, abdominal and suprailiac skinfold values that were previously obtained (Adnan et al., 2012: 429; Durning and Womersley, 1974: 79-87; Gonulates et al., 2010: 964)

Body Fat Percentage (BFP): The body fat percentage measurements were made by using the Durning-Womersley formula (Adnan et al., 2012: 429; Durning and Womersley, 1974: 79-87 Gunay et al., 2013; 562).

Women = BD = 1.1599 – 0.0717 x X

Log x = (Biceps + Triceps + Subscapular + Suprailiac)

Fat % = (4.95/ BD-4.5) X 100

Blood Pressure: In blood pressure measurement, the Riester brand blood pressure monitor was

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used. Sphygmomanometer wounded to subject's arm. A stethoscope diaphragm placed on the brachial arteries and just below the antecubital fold in the elbow of the arm. After sphygmomanometer inflated to the pressure of 160-180 mm Hg, the pressure was slowly reduced until first pulse shot clearly clicks. This was "Korotkoff sounds". This was the first "Korotkoff sounds" during the reading of the manometer was considered a systolic blood pressure index. When stroke sounds thoroughly reduced or completely cut off, manometer was re-read. This was considered the diastolic blood pressure. (Gunay et al., 2013:444). The measurements were made three times after 5 minutes relaxation period by experts in the field.

Resting Heart Rate: The resting heart rates of the participants were measured by listening with a stethoscope in sitting position for 15 seconds and were multiplied by four, and the values were recorded (Gonulates et al., 2010: 963).

The Analysis of the Data: The statistical analyses were made with the SPSS (version 18.0) program. After the analyses of the data, it was observed that all the parameters showed normal distribution. The Paired t Test was used in comparing the pre and post-test values of the Groups. The percentage (%) values were examined for the average difference. The significance value was taken as $p<0.05$.

RESULTS

Table 2. The Mean and Standard Deviations of the Age and Height Values of the Zumba, Step-Aerobics and Control Groups

Variables	Zumba Group	Step-Aerobic Group	Control Group
	Mean±S.D.	Mean±S.D.	Mean±S.D.
Age (years)	21.30±2.29	20.60±1.42	161.30±5.77
Height (cm)	166.45±6.57	161.30±5.77	21.55 ±1.90

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Table 3. The Comparison of the Pre and Post-Test Values of the Body Weight, Body Fat Percentage, MaxVO$_{2,}$ Flexibility of the Control Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Body Weight (kg)	Pre test	20	59.70±5.23	0.80	-4.120	.001*
	Post test	20	60.18±5.32			
Body Fat Percentage (%)	Pre test	20	25.10±2.88	7.25	-2.716	.014*
	Post test	20	26.92±3.10			
MaxVO2 (ml/kg/min-1)	Pre test	20	20.36±1.34	-2.75	2.104	.049*
	Post test	20	19.80± .86			
Flexibility (cm)	Pre test	20	29.50±10.67	-4.91	4.041	.001*
	Post test	20	28.05±9.73			

* p<0.05

Significant difference was determined in the body weight, body fat percentage, MaxVO$_2$ and flexibility values of the women in the control group (p<0.05). It was observed increase in the body weight, body fat percentage while decrease was seen in MaxVO$_2$ and flexibility performance after 8 weeks.

Table 4. Comparison of the Pre and Post-Test Values of the Strenght Variables of the Control Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Leg Strenght (kg)	Pre test	20	36.17±11.72	-2.21	1.180	.253
	Post test	20	35.37±9.81			
Back Strenght (kg)	Pre test	20	45.00±13.3	-3.66	2.617	.017*
	Post test	20	43.35±11.50			
Dominant Hand Grip Strenght (kg)	Pre test	20	24.62±3.93	-1.94	1.892	.074
	Post test	20	24.14±3.94			

* p<0.05

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Significant difference was determined in the back strenght values of the women in the control group ($p<0.05$). However, there was no significant difference in the leg strenght and dominant hand grip strenght values of the control group ($p>0.05$).

Table 5. Comparison of the Pre and Post-Test Values of the Blood Pressure and Resting Heart Rates of the Control Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Systolic Blood Pressure (mmHg)	Pre test	20	120.00±3.24	1.66	-1.710	.104
	Post test	20	122.00±5.23			
Diastolic Blood Pressure (mmHg)	Pre test	20	81.00±5.52	0.63	-1.000	.577
	Post test	20	81.50±5.87			
Resting Heart Rate (beat/min)	Pre test	20	67.55±4.26	1.18	-1.775	.092
	Post test	20	68.35±3.81			

No significant differences were determined in the systolic blood pressure, diastolic blood pressure and resting heart rate (RHR) values of the women in the control group ($p>0.05$).

Table 6. Comparison of the Pre and Post-Test Values of the Body Weight, Body Fat Percentage, MaxVO$_2$, Flexibility Variables of the Zumba Group.

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Body weight (kg)	Pre test	20	63.22±8.11	-4.08	10.715	.000*
	Post test	20	60.64±7.39			
Body Fat Percentage (%)	Pre test	20	25.37±2.84	-8.86	5.560	.000*
	Post test	20	23.12±2.68			
MaxVO2 (ml/kg/min-1)	Pre test	20	22.28±3.64	15.70	-6.621	.000*
	Post test	20	25.78±3.43			
Flexibility (cm)	Pre test	20	28.20±8.53	15.24	-13.932	.000*
	Post test	20	32.50±8.00			

* $p<0.05$

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Significant difference was determined in the body weight, body fat percentage, MaxVO$_2$ and flexibility values of the women in the zumba group ($p<0.05$).

Table 7. Comparison of the Pre and Post-Test Values of the Strenght Variables of the Zumba Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Leg Strenght (kg)	Pre test	20	48.99±12.99	11.85	-9.182	.000*
	Post test	20	54.80±11.66			
Back Strenght (kg)	Pre test	20	54.75±16.36	11.21	-10.107	.000*
	Post test	20	60.89±14.67			
Dominant Hand Grip Strenght (kg)	Pre test	20	27.35±4.18	0.73	-.015	.988
	Post test	20	27.55±4.22			

* $p<0.05$

Significant difference was determined in the leg strenght and back strenght values of the women in the zumba group ($p<0.05$). However, there was no significant difference in the dominant hand grip strenght values ($p>0.05$).

Table 8. Comparison of the Pre and Post-Test Values of the Blood Pressure and Resting Heart Rate of the Zumba Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Systolic Blood Pressure (mmHg)	Pre test	20	119.50±3.94	-0.41	1.000	.330
	Post test	20	119.00±3.07			
Diastolic Blood Pressure (mmHg)	Pre test	20	79.50±3.94	0.62	-1.000	.330
	Post test	20	80.00±3.24			
Resting Heart Rate (beat/ min)	Pre test	20	67.35±4.23	0.44	-.623	.541
	Post test	20	67.65±3.70			

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Significant difference was not determined in the systolic blood pressure, diastolic blood pressure and resting heart rate (RHR) values of the women in the zumba group ($p>0.05$).

Table 9. Comparison of the Pre and Post-Test Values of the Body Weight, Body Fat Percentage, MaxVO$_2$, Flexibility Variables of the Step-Aerobic Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Body Weight (kg)	Pre test	20	58.22±9.93	3.81	8.342	.000*
	Post test	20	56.00±9.29			
Body Fat Percentage (%)	Pre test	20	23.83±4.09	-5.79	4.776	.000*
	Post test	20	22.45±3.86			
MaxVO2 (ml/kg/min-1)	Pre test	20	21.48±2,38	-25.27	-9.668	.000*
	Post test	20	26.91±2.77			
Flexibility (cm)	Pre test	20	32.15±9.17	-11.50	-14.091	.000*
	Post test	20	35.85±9.20			

* $p<0.05$

Significant difference was determined in the body weight, body fat percentage, MaxVO$_2$ and flexibility values of the women in the step-aerobic group ($p<0.05$).

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Table 10. Comparison of the Pre and Post-Test Values of the Strenght Variables of the Step-Aerobic Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Leg Strenght (kg)	Pre test	20	48.62±17.05	-15.75	-7.560	.000*
	Post test	20	56.28±15.40			
Back Strenght (kg)	Pre test	20	55.55±18.96	-14.92	-4.993	.000*
	Post test	20	63.84±16.70			
Dominant Hand Grip Strenght (kg)	Pre test	20	24.24±4.35	-6.43	-2.685	.015*
	Post test	20	25.80±4.95			

* $p<0.05$

Significant difference was determined in the leg strenght, back strenght and dominant hand strenght values of the women in the step-aerobic group ($p<0.05$).

Table 11. Comparison of the Pre and Post-Test Values of the Blood Pressure and Resting Heart Rates of the Step-Aerobic Group

Variables		N	Mean±S.D.	Mean Difference (%)	t	p
Systolic Blood Pressure (mmHg)	Pre test	20	120.50±3.94	-0.41	1.000	.330
	Post test	20	120.00±3.24			
Diastolic Blood Pressure (mmHg)	Pre test	20	80.00±5.61	-0.62	1.000	.330
	Post test	20	79.50±6.48			
Resting Heart Rate (beat/min)	Pre test	20	67.35±4.23	-0.07	-.075	.941
	Post test	20	67.30±3.14			

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Significant difference was not determined in the systolic blood pressure, diastolic blood pressure and resting heart rate (RHR) values of the women in the step-aerobic group ($p>0.05$).

DISCUSSION and CONCLUSION

Sixty woman volunteers, who did not do regular exercises and did not have any illnesses and sports injuries, participated in this study. The women participating in the study were divided into 3 different groups as follows; and the Control Group (n=20, age: 21.55±1.90), the Zumba Group (n=20, age: 21.30±2.29) and the Step-Aerobic (n=20, age: 20.60±1.42). The exercises were applied to the Zumba and Step-Aerobics Groups for 8 weeks, 3 days a week, for 60 minutes.

In the present study, there was significant difference was determined in the body weight value in the Zumba and the Step-Aerobics Groups at $p<0.001$ level, and in the Control Group at $p<0.01$ level. An increase was observed in the Control Group with 0.80%. A decrease of 4.08% was observed in the Zumba Group, and 3.81% in the Step-Aerobic Group. It is possible to claim that the Zumba Exercise is more effective in the decreasing the body weight (Table 3, Table 6, Table 9). It was reported in previous studies that the Aerobic dance exercises, Step-aerobics and Zumba exercises caused significant decreases in the body weight (Altinoz, 2010: 38; Arslan, 2011: 160; Bicer et al., 2009: 1; Krishnan et al., 2015: 109; Ljubojevic et al., 2014: 29; Tortop et al., 2010: 91) there are also some study indicating that they did not have significantly effects on weight (Rossmeissl et al., 2016: 7).

In the present study, significant difference was determined in the body fat percentage values in the Control Group at $p<0.05$, Zumba and Step-Aerobic Groups at $p<0.001$ level.There was an increase in the Control Group in 2.75% while there was 8.86% decrease in the Zumba Group, 5.79% in the Step-Aerobic Group. It is possible to claim that the Zumba Exercise is more effective in decreasing the body fat percentage (Table 3, Table 6, and Table 9). Although there are studies reporting that the Aerobic dance, Step-Aerobics and Zumba Exercise programs improved the fat percentage and the body composition (Adnan et al., 2012: 428; Barene et al., 2013: 990; Micallef, 2014: 211; Tortop et al., 2010: 91), there are also some studies reporting that they did not have significantly effects (Delextrat et al., 2015; Dowdy et al., 1985: 227; Rossmeissl et al., 2016: 7).

In the present study, significant difference was observed in $MaxVO_2$ values in the Control Group at $p<0.05$ level, Zumba and the Step-Aerobic Groups at $p<0.001$ level. It was observed that there was 15.70% decrease in the Zumba Group, 25.27% increase in the Step-Aerobic Group; and a 2.75% decrease in the Control Group. It is possible to claim that the Step-Aerobic Exercise is more effective in the increase of the $MaxVO_2$

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(Table 3, Table 6, Table 9). Adnan et al., (2012) conducted a study and reported that an Aerobic Dance applied for 6 weeks as 2 days a week for about 40 minutes at the high-influence segment improved the aerobic capacity ($MaxVO_2$). In previous studies, it was reported that the Step-Aerobic, Aerobic dance and Zumba Exercise programs improved the $MaxVO_2$ performance (Altinoz, 2010: 40; Delextrat et al., 2015; Dowdy et al., 1985: 227; Drobnik-Kozakiewicz et al., 2013: 3; Hallage et al., 2010: 2261; Jaywant, 2013: 6; Kosar et al., 1998: 3; Luettgen et al., 2012: 357; Najafnia et al., 2013: 1335; Okonkwo, 2012: 31). These studies are consistent with our study.

In the present study, significant difference was determined in the flexibility values in the Control Group at $p<0.01$, the Zumba and the Step-Aerobic Groups at $p<0.001$ level. It was observed that there was 15.24% increase in the Zumba Group, 11.50% increase in the Step-Aerobic Group; and a decrease in the Control Group in 4.91%. It is possible to claim that the Zumba Exercise is more effective in increasing the flexibility (Table 3, Table 6, Table 9). Najafnia et al., (2013) conducted a study and reported that 8-week Step-Aerobic Exercise increased the flexibility performance; and Donath et al., (2014) reported in their studies that 8-week Zumba Exercise improved the flexibility performance. Wu et al., (2012) reported that an Aerobic dance exercise which was applied for nearly 3 years, 5 times a week for 30 minutes at low intensity improved the flexibility performance in the lower extremity. Kin et al., (1996) conducted a study and compared the effects of 8-week Step and Aerobic dance applications on physical fitness. The Step and Aerobic dance Groups participated in 8-week program for 3 days a week, 45 minutes a day at a level of 60-70% of their maximum heart beat reserves. It was reported that the Step and Aerobic Group flexibility values were increased.

In the present study, a significant difference was determined in the back and leg strenght values in the Zumba and Step-Aerobics Groups at $p<0.001$ level, and in the Control Group in the back strenght value at $p<0.05$ level. In addition, in the dominant hand grip strenght, there was a significant difference in the Step-Aerobic Group at $p<0.05$ level. No significant difference was determined in other parameters. An increase was determined in the leg strenght in the Zumba Group in 11.85%; and in 15.75% in the Step-Aerobics Group; while there was a decrease in the Control Group in 2.21%. An increase in the back strenght was determined in the Zumba Group in 11.21%; and in the Step-Aerobic Group in 14.92%; while a decrease was determined in the Control Group in 3.66%. An increase was determined in the dominant hand grip strenght in the Zumba Group in 0.73%; in the Step-Aerobic Group in 6.43%; and a decrease in the Control Group in 1.94%. It is possible to claim

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that the Step-Aerobic exercise is more effective in the increase in the strenght performance (Table 4, Table 7, and Table 10). Tortop et al., (2010) conducted a study and reported that the Step-Aerobic exercise improved the back strenght and right hand grip strenght. In a study conducted by Irez et al., (2014), 20 volunteering university students participated in the Aerobic dance group, 20 students in the Step dance group, and 15 students in the Control Group. The exercises were applied to the students for 3 months, 2 times a week and for 1 hour. At the end of the study, significant improvements were observed in the Step dance group leg strenght values. Kurt et al., (2010) conducted a study with middle-aged sedentary women and applied 8-week Step-Aerobic exercises to evaluate the effects of these exercises on some physical fitness parameters, and observed that there was 24,74% improvement in the leg strenght values, and 14,5% improvement in the back strenght values. Delextrat et al., (2015) conducted a study and reported that 8-week Zumba exercises influenced the muscle strenght values in healthy women in a positive way.

In the present study, no significant differences were found in the systolic blood pressure and diastolic blood pressure values of the Control, Zumba, Step-Aerobics Groups. It was also observed that there was an increase in the systolic blood pressure in the Zumba Group in 0.48%; in the Step-Aerobic Group in 0.42%; while there was an increase in the Control Group in 1.66%. There was a decrease in the diastolic blood pressure in the Zumba Group in 0.62%; in the Step-Aerobic Group in 0.62%; and an increase in the Control Group in 0.63%. It was observed that the Zumba and Step Aerobic exercises did not cause any significant differences in the systolic blood pressure and diastolic blood pressure values (Table 5, Table 8, and Table 11). Dody et al., (1985), Bahia et al., (1988), Kostic et al., (2005) conducted a study and reported that after the Step-Aerobics and Aerobic dance exercises, the systolic and diastolic blood pressure decreased; however, this decrease was not significant. Rossmeissl et al., (2016) indicated that zumba dance exercises didn't have any effects on systolic and diastolic blood pressure. These studies show parallelism with the results of the present study. Bicer et al., (2009), Raju (2014) and Cugusi et al., (2015) conducted a study and observed that the Zumba, Step-Aerobics and Aerobic dance exercise programs caused decreases in the systolic and diastolic blood pressure values. The results of these studies do not overlap with the results of our study.

In the present study, no significant differences were determined in the resting heart rate values in the Control, Zumba, Step-Aerobics Groups. There was a decrease in the Zumba Group in 0.44%; in the Step-Aerobic Group in 0.07%; while in the Control Group an increase was determined in 1.18%. No influences of the ex-

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ercises were observed in the resting heart rate (Table 5, Table 8, and Table 11). The results of the study was conducted by, Rossmeissl et al., (2016) reported that 12-week Zumba dance programme didn't have an effect on resting heart rate values significantly, support our results. Doddy et al., (1985), Bahia et al., (1988), Kostic et al., (2005) and Kurt et al., (2010) reported in their studies that the Step-Aerobics and Aerobic dance exercises influenced the resting heart rate in a positive way, and caused significant decreases. The results of these studies do not overlap with the results of our study.

As a conclusion, it was observed in this study that the 8-week zumba and step-aerobic exercises influenced the Aerobic fitness, body composition, flexibility, leg and back strenght, only in step-aerobic exercises in dominant hand grip strenght, which are among the health-related physical fitness factors, in a positive way; while both exercise programs did not influence the blood pressure, resting heart rate in a significant way. The difference in the improvement in the dominant hand grip strenght may be associated with the density of the hand and arm movements in the step-aerobic exercises, and with the characteristics of the group. It is considered that the duration, frequency and density of the exercises are sufficient to influence the health-related physical fitness factors in a significant way; however, it is also considered that more time is needed to increase the resting heart rate and blood pressure values in a positive way.

APPLICATIONS in SPORT

Zumba and step aerobics, which are one of the most popular dance activities among young women, are effective tools to improve aerobic fitness, body composition, flexibility, leg and back strenght performance. Most of women can be canalized to dance activities like zumba, step aerobic except other activities (walking, running, biking, etc.) for losing weight, improve the daily living conditions, being healthy, increasing quality of life and increasing aerobic fitness. The frequency and the duration of exercises should be increased to improve blood pressure and resting heart rate. In further studies, comprehensive studies which examine the effect of step aerobics, zumba or other dances (latin dances) on different parameters related to health or performance on different populations, should be performed.

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EVALUATION OF THE SCHOOL OF PHYSICAL EDUCATION AND SPORTS STUDENTS' LEARNING STYLES ACCORDING TO THE GREGORC LEARNING STYLE[1]

GREGORC ÖĞRENME STİLİNE GÖRE BEDEN EĞİTİMİ SPOR YÜKSEKOKULU ÖĞRENCİLERİNİN ÖĞRENME STİLLERİNİN İNCELENMESİ

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Öz: Bu çalışmada beden eğitimi ve spor yüksekokulu öğrencilerinin (BESYO) Gregorc öğrenme stiline göre tercih ettikleri öğrenme stillerinin belirlemesi ve bu tercihlerinin bazı değişkenler bakımından incelenmesi amaçlanmıştır. İlişkisel tarama modelinin kullanıldığı bu çalışma Balıkesir Üniversitesi, Beden Eğitimi ve Spor Yüksekokulunda öğrenim gören ve tesadüfi örneklem metodu ile seçilen toplam 480 (nmen=223,nwomen=257) öğrenci ile yürütülmüştür. Veri toplama aracı olarak "Gregorc Öğrenme Stilleri Ölçeği" ve "Kişisel Bilgi Formu" kullanılmıştır. Verilerin analizinde; frekans ve yüzde dökümleri alınmış, Kaykare (X2) testi kullanılmıştır. Yapılan analizler sonunda çalışmaya katılan BESYO öğrencilerinden 36,9 % bölümünün Somut Rastgele (Cr) öğrenme stilini tercih ettikleri tespit edilmiştir. Pes öğrencilerinin öğrenme stillerinin cinsiyet, öğrenim görülen bölüm ve algılanan akademik başarı değişkenleri ile arasında anlamlı bir ilişkinin olmadığı ($p>0.05$), sınıf seviyesi değişkeni ile aralarında anlamlı bir farklılık olduğu ($p<0.05$) görülmüştür. Buna göre Beden eğitimi ve spor yüksekokullarındaki ders içeriklerinin planlanmasında öğrencilerin baskın olan öğrenme stilleri dikkate alınarak uygun öğretim yöntemleriyle derslerin işlenmesi ve ders müfredatlarının buna göre hazırlanması önerilmektedir.

Anahtar Kelimeler: Öğrenme Stili, Müfredat, Eğitimde Bireysel Farklılıklar, Beden Eğitimi ve Spor Yüksekokulu Programı

Abstract: This study aims to determine the learning styles preferred by Physical Education and Sports School (PES) students according to the Gregorc learning style and to evaluate these preferences with regard to some variables. This study uses the relational screening model and was conducted on 480 (nmale=223,nfemale=257) students attending Balıkesir University Physical Education and Sports School selected using random sampling method. "Gregorc Learning Style Delineator" and "Personal Information Form" have been used as a data collection tool. The analysis has determined that, out of all the PES students which took part in the study, 36.9 % prefer the concrete random (CR) learning style. Taking into account the results of this research, it is strongly suggested that the dominant learning styles of the students be taken into account when planning the content of the curriculum and during the teaching phase at physical education and sports schools.

Key Words: Learning style, Curriculum, Individual differences in education, Physical Education and Sports School

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INTRODUCTION

In this day and age, with regards to the quality of education, it is imperative that the differences between individuals within the same learning environment be taken into consideration. Each individual's preferences regarding the perception, coding and processing of information is different. These differences between students also affects their learning processes. The difference between the perception and success levels of individuals who have passed through the same learning processes is the most convincing proof of this. This has increased the need to take into account the individual differences in learning.

The most basic difference in learning is the individuals' learning style. Learning style is defined as how a student learns something, rather than what a student learns (Hunt, 1979) as cited in (Yenice & Saracaloğlu, 2009). In other words, learning style is the process of taking in, processing information and putting forth a new product using this information. The literature on the subject defines learning style in a number of ways. Dunn and Dunn (1993) defined learning style as "The different way in which each learner begins to concentrate on and then process and retain new and difficult information", while Kolb (2005) defined it as "the method an individual personally prefers during the process of perceiving and processing information".

In the education field, every student's learning style and learning needs differs. Increasing the learning success of students who have adopted different learning styles will be possible only through the determination of their individual differences in this regard. The differences in learning styles requires teaching professionals to present their teaching methods and course materials in different ways (Boatman et al., 2008). Therefore, good planning is very important for the teaching-learning process (Silver, Strong & Perini, 1997).

Process-oriented planning created for the learning process as a result of the identification of individual learning styles will provide a great source of convenience for curriculum planners and practitioners and facilitate the achievement of set teaching goals. Many previous studies have pointed out that teaching plans created in accordance with the students' learning styles in learning environments have increased success rates (Burns et al,.1998; Gorevanova, 2000). Gregorc Learning Style Model is one of the learning style models developed in this regard and is used in this study. This model focuses on methods of perception, process, retention and decoding of information. According to Gregorc; learning styles of an individual consist of the learning states they formed with respect to their perception skills (Gregorc, 1984).

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It is important to shape teaching methods with regard to the target group of the process. Using methods and techniques befitting the student during curriculum planning will affect the success of this process. To be more specific, individual learning style is the most important component to keep in mind when preparing curriculum. The literature on the subject shows many studies proving this (Kılıç, 2002; Bahar et al., 2009). Learning consists of various components coming together in a suitable environment and under suitable conditions; therefore, learning will occur only so far as these components are sufficient.

Physical education and sports schools are departments which conduct both theoretical and practical lessons and which question both the level of talent and academic achievement of individuals during the student selection process. A literature survey has shown that there has been a very limited number of studies conducted in order to determine the learning styles of students enrolled in these departments (Grenier, 2006; Yalız & Erişti, 2009; Ristori et al.,2011). It is stipulated that the determination of physical education and sports school students' learning styles will influence the restructuring of their curriculum. Therefore, this study aims to answer the following question; "What is the distribution of the learning styles of physical education and sports school students?"

METHODOLOGY

Model Research: This is a descriptive study conducted using the relational screening model which aims to evaluate the learning styles preferred by physical education and sports school students with respect to certain variables.

Participants: The study is conducted at Balıkesir University Physical Education and Sports School, which has a total of 950 students enrolled in the 2014-2015 academic year in 3 different departments (Physical Education Teaching Department, Sports Coaching Education Department and Sports Management Department). During the course of the study a total of 600 students were given the delineator and delineators deemed incomplete or incorrect were removed from the study; thus the study was concluded with 480 students.

46.5% of students participating in the study were male (n_{male}=223), while 53.5% were female (n_{female}=257). If analyzed according to their departments; 23.3% (n=126) of the participants were enrolled in the teaching department, 40.4% (n=194) were enrolled in the coaching department and 33.3% (n=160) were enrolled in the sports management department. If analyzed according to their academic level, 33.3% (n=160) of the participants are freshmen, 40.0% (n=192) are sophomores, 20.0% (n=96) are juniors and 6.7% (n=32) are seniors. When asked about their perceived academic success levels, 2.9% (n=14) of

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the participants replied very bad, 22.3% (n=107) replied bad, 20.4% (n=146) replied good and 8.8% (n=42) replied with very well.

Data Collection Tools: Two data collecting tools were used in this research; a "Personal Information Form" prepared by the researcher and the "Gregorc Learning Styles Delineator", which was developed by Anthony F. Gregorc (1982a; 1982b) and adapted to Turkish by Ekici (2002), who also conducted its the validity and reliability studies. The delineator describes the concrete sequential, abstract sequential, concrete random and the abstract random learning styles. The Gregorc Learning Style Delineator consists of 10 items with 4 options each and participants are asked to put the concepts in those articles in order within themselves marked as 1, 2, 3, 4 according to their importance. Each option contained in the questions corresponds with one of the 4 learning styles (Gregorc, 1982a). The Cronbach-Alpha reliability factors of the delineator have been determined as 0.76 for the concrete sequential learning style, 0.72 for the abstract sequential learning style, 0.75 for the concrete random learning style and 0.80 for the abstract random learning style (Ekici, 2002).

Data Collection: A permit has been obtained from the Physical Education and Sports School administration in the 2014-2015 spring semester in order to conduct the study and collect the research data. Afterwards, having consulted and gotten permission from the department heads, the researcher conducted the study on the day and time they appointed. The researcher informed the students of the aim and importance of the study beforehand. The study has been conducted in accordance with the Helsinki Declaration and the institutional ethical requirements for human experimentation. It has been observed that the students completed the data collection tools within 20-25 minutes.

Data Analysis: In determining the learning styles of the students, the study benefited from frequency and percentages. The study used the Pearson Chi-Square (X^2) test in the numerical comparisons aimed at determining whether the students' learning styles differed due to various characteristics. Statistical analyses were performed using SPSS statistical software package. In the statistical analyses, the relevance level was taken to be $p<0.05$.

RESULTS

This section contains tables with comments on the results obtained from the Gregorc Learning Style Delineator and results of the statistical analyses of the data collected towards for research purposes, as well their explanations.

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Table 1. Frequency Analysis of the Participants' "Learning Styles"

Learning Style	N	%
Concrete Sequential (CS)	81	16,9
Abstract Sequential (AS)	73	15,2
Abstract Random (AR)	149	31,0
Concrete Random (CR)	177	36,9

The analysis has determined that, out of all the physical education and sports (PES) students which took part in the study, 36.9 % (n=177) of the students have a concrete random (CR) learning style On the other hand, 31% (n=149) of the students have an abstract random (AR) learning style, 16.9% (n=81) have a concrete sequential (CS) learning style and 15.2% (n=73) have an abstract sequential (AS) learning style.

When the learning styles of the students are evaluated according to the gender variable, it can be observed that 20.2% (n=52) of the female students have the CS learning style, 14.8% (n=38) have the AS, 28.0% (n=72) have the AR and 37.0% (n=95) have the CR learning style. On the other hand, out of all the male participants of the research 13.0% (n=29) have the CS, 15.7% (n=35) have the AS, 34.5% (n=77) have the AR and 36.8% (n=82) have the CR learning style. Accordingly, the result of the analyses of the PES students' learning styles in relation to the gender variable shows that there is no meaningful difference between the groups. [x2 (sd=3,n=480)=5.39, p>0.05].

Table 2. Frequency Analysis of the Participants' "Learning Styles" as per The "Department" Variable

Department type	CS		AS		AR		CR		Total
	N	%	N	%	N	%	N	%	N
PES	29	23.0	18	14.3	32	2.4	47	37.3	126
CE	35	18.0	29	14.9	65	33.5	65	33.5	194
SM	17	10.6	26	16.2	52	32.5	65	40.6	160

PES: Physical Education and Sports Teaching

CE: Coaching Education

SM: Sports Management

The result of the analyses shows that there is no meaningful difference in the learning styles of the physical education and sports school students with relation to the variable of the department they are enrolled in. [x2 (sd=6,n=480)=9.86, p>0.05].

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Table 3. Frequency Analysis of the Participants' Learning Styles as per the "Academic Level" Variable

Class Level	CS		AS		AR		CR		Total
	N	%	N	%	N	%	N	%	N
1th.Grade	20	12.5	26	16.2	46	28.8	68	42.5	160
2th.Grade	45	23.4	29	15.1	50	26.0	68	35.4	192
3th.Grade	13	13.5	12	12.5	40	41.7	31	32.3	96
4th.Grade	3	9.4	6	18.8	13	40.6	10	31.2	32

The analysis made according to the variable of the academic level of the students shows meaningful difference between the physical education and sports students' learning styles. [x^2 (sd=9,n=480)=17.81, p<0.05].

Table 4. Frequency Analysis of the Participants' Learning Styles as per the "Perceived Academic Success" Variable

Group	CS		AS		AR		CR		Total
	N	%	N	%	N	%	N	%	N
So Bad	2	14.3	5	35.7	5	35.7	2	14.3	14
Bad	14	13.1	9	8.4	38	35.5	46	43.0	107
Intermediate	30	20.5	24	16.4	41	28.1	51	34.9	146
Good	26	15.2	29	17.0	47	27.5	69	40.4	171
So Good	9	21.4	6	14.3	18	42.9	9	21.4	42

The analysis made according to the variable of the perceived academic success of the participants shows a meaningful difference between learning styles of physical education and sports students depending on their perceived academic success. [X^2 (sd=12,n=480)=20.80, p>0.05].

DISCUSSION

Many researches show that certain elements such as the individual's psychological characteristics, communication skills, training field and profession are effective in the shaping of an individual's learning styles (Gregorc & Butler, 1984; Aşkar & Akkoyunlu, 1993; Kolb & Kolb, 2005). These elements are also effective in the division of the learning style into affective, physiological

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and cognitive dimensions (Cornet, 1983; Grasha, 1996; Ekici, 2013).

The following results have been reached in the study, which uses the Gregorc learning style model prepared on the cognitive dimension and aims to determine whether the learning styles of students enrolled in the Balıkesir University Physical Education and Sports School differ due to variables such as gender, the department they are enrolled in, academic level and their perceived academic success level:

The analysis has determined that, out of all the physical education and sports (PES) students which took part in the study, 36.9 % (n=177) have a concrete random (CR) learning style. On the other hand, 31% (n=149) of the students have an abstract random (AR) learning style, 16.9% (n=81) have a concrete sequential (CS) learning style and 15.2% (n=73) have an abstract sequential (AS) learning style. (Table 1).

This result reveals that a majority of the Physical Education and Sports School students have a concrete random (CR) and abstract random (AR) learning style. Individuals with a concrete random (CR) learning style are better than the others about solving existing problems in comparison with others. While individuals have abstract random (AR) learning styles they don't need to certain order to perceive events and concepts (Ekici, 2013).

The findings of the research show that the difference observed between the learning styles of the physical education and sports school students is similar to the findings of various researches conducted in this field (Yalız & Erişti, 2009; Küçük Kılıç & Öncü, 2014; Alemdağ & Öncü, 2015). The different teaching methods employed by the teachers in their educational background may be one of the key factors leading to the differentiation of the students' learning styles.

The difference between the learning styles of students within the same teaching environment puts a great responsibility upon teachers. Due to this reason, teachers have to include activities which take into account the learning styles and individual differences of their students while preparing their teaching plans (Karakış, 2006; Şimşek, 2007).

Gender is a variable that researches frequently focus on. The result of the analyses on whether the PES students' learning styles differ in relation to the gender variable shows no meaningful difference in this study either. This finding is parallel to most of the studies in this field (Hallock et al., 2003; Jones et al., 2003; Ames, 2003; Mutlu, 2008; Yalız & Erişti, 2009). With this finding, it can be said that the gender factor does not affect the difference in the learning style of students.

The findings of the research also show that the learning styles of physical education and sports

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school students do not differ due to the variable of the department they are enrolled in. In other words, it has been observed that the difference between their departments do not affect their learning styles (Table 2).

The study has found a meaningful difference between the physical education and sports students' learning styles due to the variable of the academic level of the students (Table 3). This finding is parallel to the results of similar studies (Evin Gencel & Köse, 2011; Özdemir & Kesten, 2012; Katrancı &Bozkuş, 2014; Alemdağ & Öncü, 2015). However, contrary to said findings, other studies in this field have found that the academic level of students do not affect their learning styles (Tuna, 2008; Yalız & Erişti, 2009; Yenice, 2012). In the studies they conducted, researches have supported Kaplan and Kies' (1995) opinion that "the learning style is an inborn characteristic which does not easily change during the lifetime".

However, the reason why there is a difference in learning styles due to the academic level variable may be that the senior students are preparing for examinations necessary to enter their profession and thus are more focused on their cognitive dimensions during this period.

Similarly, previous studies in the field have pointed out that learning style preferences of students affect their academic success levels (Boatman et a.l. 2008; Chiou, 2008). The findings of this study have shown that the concrete random (CR) is the most preferred learning method of PES students with regards to academic success and that students who indicated their perceived academic success rate as very good prefer the abstract random (AR) learning method (Table 4). As Ekici (2013) stated, this result may be interpreted as a support of the opinion of students with a concrete dominant learning styles who claim that they do not find a satisfactory level of concrete learning opportunities during academic activities and perceive their success levels as low. This in turn supports the opinion that learning styles affect academic success (Clark & Starr, 1996; Uzuntiryaki et al.,2003; Cengizhan, 2008; Ekici, 2013).

CONCLUSION

The analyses have determined that, out of all the PES students which took part in the study, 36.9 % of the students prefer the concrete random (CR) learning style. It has been observed that the learning styles of PES students do not have a meaningful correlation with variables such as gender, the enrolled program and perceived academic success ($p>0.05$), however there is a meaningful difference with the variable of academic level ($p<0.05$).

This Literature survey on the topic shows that many theories and learning style models based on these theories have been developed. The results of this study show that similar findings are reached

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when the measuring tool of the same model is used on a similar sample group. The findings of this study is parallel to the findings of the study conducted by Yalnız and Erişti (2009) on the students enrolled in Anadolu University Physical Education and Sports School.

RECOMMENDATIONS

Below are some suggestions based on the findings of the research that we believe will contribute to the field. Accordingly;

The dominant learning styles of the students should be taken into account when planning the content of the curriculum at physical education and sports schools and the syllabus and teaching methods employed should include more stimulants and enable the students to use their creativity.

This study has been conducted with the Gregory learning style delineator prepared in the cognitive dimension. Studies can be conducted using other theories and models prepared in the cognitive, affective and physiological dimensions.

Future studies may employ different applications which support quantitative research techniques with qualitative research techniques.

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THE EFFECTS OF ANXIETY LEVELS OF PHYSICAL EDUCATION AND SPORT TEACHERS ON THEIR HEALTHY LIFESTYLE BEHAVIORS [1]

BEDEN EĞİTİMİ VE SPOR ÖĞRETMENLERİNİN SAĞLIKLI YAŞAM BİÇİMLERİ VE KAYGI DÜZEYLERİNİN BELİRLENMESİ

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Öz: Bu çalışmanın amacı Beden Eğitimi ve Spor öğretmenlerinin sağlıklı yaşam biçimleri ve kaygı düzeylerinin belirlenmesidir. Bu araştırmanın evrenini Adana il merkezinde görev yapan Beden Eğitimi ve Spor öğretmenleri oluşturmuştur. Bu amaç için araştırmaya 208 Beden Eğitimi ve Spor öğretmeni gönüllü olarak katılmıştır. Araştırma sonuçlarının nitelikli olabilmesi için katılan denek sayılarının (Bay:104 – Bayan:104) eşit sayıda olmasına dikkat edilmiştir. Çalışmada katılımcıların Sağlıklı yaşam biçimini belirlemek amacıyla Walker ve arkadaşları (1996) tarafından geliştirilen Yaşam Profili ölçeği ve sürekli kaygı düzeylerini belirlemek amacıyla Spielberger ve Gorsuch (1964) tarafından geliştirilen Durumluk Sürekli Kaygı Envanteri kullanılmıştır. Veriler SPSS 16.0 paket programı kullanılarak analiz edilmiştir ve anlamlılık düzeyi p>0.05 olarak belirlenmiştir. Katılımcıların verdikleri cevaplar Yaşam Profili II Teşvik Sağlık ölçeğinin 5, 6, 14, 38, 48 ve 52 maddeleri arasında faktörler açısından incelenmiştir. Bu maddelerin sonuçlarına göre, kadınlar ve erkekler arasında p>0.05 düzeyinde anlamlı bir ilişki tespit edilmiştir ancak ölçeğin diğer maddeleri arasında anlamlı farklılık tespit edilememiştir. Katılımcıların sürekli kaygı ölçeğinin 3.,7., 9., 10., 13., 15., 16., 28., 31, 32., 33. ve 34. maddelerine verdikleri cevaplara göre kadınlar ve erkekler arasında p>0.05 düzeyinde anlamlı farklılıklar tespit edilmiştir ancak ölçeğin diğer maddeleri arasında anlamlı farklılıklara rastlanmamıştır. Ayrıca, yaş ve sağlıklı yaşam davranışları arasında anlamlı bir ilişki bulunmuştur (p <0.01). Beden eğitimi ve spor öğretmenlerinin sürekli kaygı sıklığı arasında, spor sıklığı ve sağlıklı yaşam biçimi davranışları (p <0.01) arasında anlamlı farklılıkların olduğu tespit edilmiştir. Sonuç olarak bu çalışmada elde edilenler dikkate alındığında; normal kaygı düzeyine sahip insanların, daha yüksek kaygı düzeyine sahip olan insanlara göre daha sağlıklı yaşam biçiminin olduğu tespit edilmiştir. Bu bağlamda, sağlıklı yaşam profili ve kaygı düzeyleri arasında pozitif bir ilişki olduğu belirtilmiştir, ve kaygı düzeyleri insanların sağlıklı yaşam profillerine etkisinin olduğunu söylenebilmektedir. Bu bağlamda beden eğitimi ve spor öğretmenlerinin kaygı düzeylerini düşürmek amacıyla çeşitli sosyolojik ve psikolojik destekler sağlanabilir ve imkanları daha arttırabilir böylelikle kaygı düzeylerinin düşebileceği ifade edilebilir.

Anahtar Kelimeler: Sağlıklı Yaşam, Kaygı, Beden Eğitimi ve Spor Öğretmeni, Spo

Abstract: The purpose of this study is to investigate the effects of anxiety levels of physical education and sport teachers on their healthy lifestyle behaviors. For that purpose, a total of 208 (Bay:104 – Bayan: 104) physical education and sport teachers who have been working at the center of Adana province participated in this study voluntarily. Health Promoting Lifestyle Profile II developed by Walker et al., (1996), and State Trait Anxiety Inventory developed by Spielberger and Gorsuch (1964) were used in the study. The data were analyzed by using SPSS 16.0 Package Program, and the significance level was determined to be 0.05. According to results of this study, when the answers were examined for 5th, 6th, 14th, 38th, 48th and 52nd items of the Health Promoting Lifestyle Profile II, it has been found that while there is a significant relationship between men and women, there isn't a significant relationship between men and women in terms of other items. When the answers were examined for 3rd, 7th, 9th, 10th, 13th, 15th, 16th, 28th, 31st, 32nd, 33rd and 34th items of the State Trait Anxiety Inventory, it has been stated that while there is a significant relationship between men and women, there isn't a significant relationship between men and women in terms of other items. Also, it has been found that there is a significant relationship between age and healthy lifestyle behaviors (p<0.01), between frequency of sports and healthy lifestyle behaviors (p<0.01), between frequency of sports and state-trait anxiety (p<0.01), between healthy lifestyle behaviors and state-trait anxiety (p<0.05). In conclusion, taking into consideration the results of this study and current literature, it has been established that people with higher anxiety levels have lower profile of healthy lifestyle than the people with normal anxiety levels. In this context, it has been specified that there is a positive relationship between healthy lifestyle profile and anxiety levels, and anxiety levels can affect people's healthy lifestyle profiles. Improving the opportunities provided to physical education and sport teachers can decline their anxiety levels and it is also thought that they can make various sociological and psychological contributions to physical education and sport teachers.

Key Words: Learning style, Curriculum, Individual differences in education, Physical Education and Sports School

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INTRODUCTION

While some situations improve the quality of life, some situations negatively affect the quality of life. In order to improve the quality of life, it is important for the individual to have the economic and social security, to live in safety and to have necessary comfort. At the same time having a meaningful and active life, establishing positive relations with inner circle, participating in the fun activities, being given value to privacy, expressing oneself and functionally being adequate are required (Akdemir, 2005; Basaran, Guzel, & Sarpel, 2005; Akyuz, 2006).

Burger (2006) defines anxiety as an unlovely emotional situation that a healthy person needs to avoid, Bakircioglu (2006) defines it as trouble, suffocation and worry without unclear reason, being out of conscious and stemming from fears or unrelieved demands. Looking at the definitions, anxiety breaks down the inner balance of human and it makes the feeling like ambiguity, horror, sadness, panic, pressure, tension, boredom, suffocation (Esen, 2012). Diverse conditions and circumstances create psychological complications in the individual being in a situation to show reaction to the various stimulants coming from the surroundings in which humans live. This stimulant – reaction relation affect humans in various ways and this can be a reason for some behavior disturbances. This tension and manner of anxiety situation which occurs as a result of the interaction human with the surrounding is defined as stress (Ozguven, 2000). Anxiety is classified by scientists in few ways. According to Spielberger (Oner and Compete, 1998), anxiety is accepted as one of the basic feelings of human. Everybody feels some anxiety in some situations in which s/he perceives danger. This kind of anxiety created by dangerous conditions is a temporary condition generally experienced by every individual. This is called state anxiety. State anxiety stems from perceiving and interpreting the conditions in a way to threat and create danger for the situation humans are in. This situation creates suffering, not a lovely situation of affection. This affection situation is perceived, understood and felt. In this process the conscious is open, aware and awoke. Another kind of anxiety is trait anxiety. Trait anxiety is the manner of displeasure and unhappiness formed as a result of perceiving the situations that are harmless and neutral by individual as harmful. Being not satisfied with the situation, behaving like something bad will happen in any moment are the characteristics of the individuals whose anxiety levels are high. Anxieties not correlating the situation directly which the individual is in, the anxieties with reasons not understood clearly by others are trait anxieties. Trait anxiety is named as neurotic anxiety too. The intensity and duration of this kind of anxiety differs from according to structure of personality. Having the structure of personality inclined to anxiety affects the trait anxiety level. Trait anxiety level affects threatening the humans according to the features

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of personality structure, increasing the dangerous situational anxiety level, perceiving, understanding, analyzing, and interpreting the environment (Koknel, 1998).

Health is defined by different individuals in different ways. The most used and the most accepted definition has been made by World Health Organization (WHO) in the year 1946. According to WHO health; "is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". The contemporary and modern aspect of this definition is that it doesn't not squeeze the illness to the dimensions of symptoms and it discusses the human as a whole with psychologic and social aspects. So there is a convenient definition formed according to the developing medico-social model (Baltas, 2008). Lifestyle is the total of the personal decisions on which the individuals have control. The healthy lifestyle means that individuals control all the behaviors affecting their health and arrange the daily activities by choosing the appropriate behaviors suitable for their health statue. According to another statement, it is not merely being protected from illnesses, the struggle of the behaviors for improving well-being a lifetime. Healthy lifestyle behaviors are affected from many factors such as gender, age, environment, level of income, having social security, smoking or alcohol consumption, the presence of social activities (Yıldırım, 2005; Karadeniz et al., 2008). Behavior is an important variable for health education. When the health behaviors are separated as those improving the health and giving harm to health, the behaviors giving harm to health include the behaviors like smoking, excessive consumption of alcohol, excessive consumption of fatty meal and bakery products and fast food eating. The behaviors improving the health contain such behaviors as sports, adequate and balanced nutrition that protect individual from illnesses (Molina et al., 2009).

Sports is a competition-oriented activity surrounded by harsh rules requiring the physiological, psychological, aesthetic, technic features when performed at high level which has become concrete in different branches by customizing physical education activities (Sisko, 2002). The diversity of expectations from sports life brings the requirement that sports lives must be leaded in an ordered composition. The purpose of physical education and sports activities being one of the most important education means applied by developed societies is to contribute to the physical, social, psychologic, cultural and mental development of humans and to raise healthy generations in the society (Ozer and Aktop, 2003).

METHOD

The subject of this study is to determine the healthy lifestyle and anxiety levels of the Physical Education and Sports Teachers working in Adana province. The Physical Education and

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Sports Teachers working in central Adana province constitute the population of this study. For this purpose, a total of 208 Physical Education and Sports Teachers participated in the study voluntarily. For the results to be qualified, equal numbers (Male:104-Female:104) of the subjects have been ensured.

Data Collection Tools

State and Trait Anxiety Inventory (STAI)

Two kinds of anxiety having different features from each other are state and trait anxiety. This mentality is being put forward twice by the factor analysis studies of Cattel and Scheier, later it has become the basis of the two factorial anxiety theory developed by Spielberger et all. The purpose of this inventory started to be developed by Spielberger and Gorsuch to measure trait and anxiety levels of being normal and abnormal individuals 89. In the trait anxiety inventory the answer options gathered in the four categories are (1) Never, (2) Some, (3) Very (4) Completely; in the Trait Anxiety Inventory, the options are (1) Almost Never, (2) Sometimes, (3) Mostly, (4) Almost Always. There are two kinds of statements in the inventories. We can say that these are first-hand or straight (direct) and reverse statements. Direct statements utter negative feelings; the reverse statements express positive feelings. When these second type of statements are scored, those weighing 1 are changed into those weighing 4 and vice versa. 4. In the direct statements, the answers weighing 4 shows that the anxiety is high. In the reverse statements, the answers weighing 1indicates high anxiety and those weighing 4 shows low anxiety. The statement ‘’I am anxious‘’ can be shown as an example to the reverse statements and the one ‘’I feel myself calm‘’ for direct statement. In this case, if the option weighing 4 is marked for ‘’I am anxious” and the one weighing 1 is marked for “I feel myself calm‘’, these answers reflect high anxiety. There are ten reverse statements in the state anxiety inventory. These are 1st, 2nd, 5th, 8th, 10th, 11th, 15th, 16th, 19th and 20th items. In the trait anxiety inventory, the number of the reverse statements are seven and these are 21 st,26 th, 27 th, 30 th, 33rd,36 th and 39 th items (Oner, 1997).

The Scale of Healthy Lifestyle Behaviors

Health promoting lifestyle scale has been developed by Walker and colleagues to measure the health promoting behaviors of the individuals by basing on the Pender’s model of promoting health. The first version of the scale is composed of 48 items and six factors. The measurements are studied on 952 industrial workers including white, western and middle class. Sub-factors and Cronbach Alpha coefficients are; self-realization (13 items-0.94), health responsibility (10 items-0.81), exercise (5 items -0.80), nutrition (6 items -0.75), inter-individuals support (7 items -0.80), stress management (7 items -0.70). The general coefficient of the scale is 0.92. The variance explained by the six factors is 47.1% (Walker and Hill,

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1996). The scale was revised in the year 1996 and was renamed as HLBS-II. The scale is composed 52 items and six factors.

These are; spiritual development, inter-individual relations, nutrition, physical activity, health responsibility and stress management. Data have been obtained from 712 individuals aged between 18 and 92. Literature has been reviewed for the content validity and expert assessment was resorted. Factor analysis is made for the content validity. Cronbach Alpha value being the reliability coefficient of the inventory is 0.94 for the total inventory and varies between 0.79-0.87 for the six sub-factors. Sub-inventories are; health responsibility (3, 9, 15, 21, 27, 33, 39, 45, 51), physical activity (4, 10, 16 ,22, 28, 34, 40, 46), nutrition (2, 8, 14, 20, 26, 32, 38, 44, 50), spiritual development (6, 12, 18,24,30,36,42,48,52), inter-individual relations (1,7,13,19,25,31,37,43,49) and stressmanagement(5,11,1723,29,35,41,47) The value was determined as 0.89 with test retest with three weeks interval. All of the items of the inventory are positive, it has no reverse items. Marking is done on the Quattro-Likert type inventory. The inventory is scored as never (1), sometimes (2), often (3), regularly (4). The lowest score for the entire inventory is 52, the highest score is 208. It is stated that the revised scale can be used in determining the behaviors of improving health and evaluating the effectiveness of the programs planned accordingly (Walker et al., 1987).

Data Analysis

Data gathered from the research groups are coded and analyzed in SPSS 16.0 package program. T test is used in the independent groups to compare two groups, One Way ANOVA test for the comparison of the multi groups and Spearman correlation test is used to measure the relations among the variables. The significance level is accepted as $p<0.05$.

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FINDINGS

Table 1. Pearson Correlation Test Results

		Healthy Lifestyle Behaviors (Total Score)	State Anxiety (Total Score)	Trait Anxiety (Total Score)
Age	Pearson Correlation	,190(**)	-,095	-,112
	Sig. (2-tailed)	,006**	,176	,111
Gender	Pearson Correlation	,008	,087	,061
	Sig. (2-tailed)	,910	,055	,387
Tenure?	Pearson Correlation	,109	-,128	-,132
	Sig. (2-tailed)	,117	,066	,060
Do you smoke?	Pearson Correlation	,141	,083	,089
	Sig. (2-tailed)	,045	,234	,206
How often do you do sports?	Pearson Correlation	,344(**)	,144(*)	,158(*)
	Sig. (2-tailed)	,000***	,040*	,024*
Healthy Lifestyle Behaviors (Total Score)	Pearson Correlation	1	-,178	-,168
	Sig. (2-tailed)		,009	,017
State Anxiety (Total Score)	Pearson Correlation	-,178	1	,908(**)
	Sig. (2-tailed)	,009		,000***
Trait Anxiety (Total Score)	Pearson Correlation	-,168	,908(**)	1
	Sig. (2-tailed)	,017	,000***	

When table 1 is analyzed, the relations between the items are as follows; positive significant relations at a level of $p<0.01$ between Healthy lifestyle behaviors and age, at a level of $p<0.001$ between the question How often do you do sports? and healthy lifestyle behaviors, at a level of $p<0.05$ between the question How often do you do sports? And state anxiety total score, at a level of $p<0.05$ between the question How often do you do sports? and trait anxiety total score, and at a level of $p<0.01$ between the trait anxiety total score and state anxiety total score; negative

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significant relations at a level of $p<0.01$between Healthy lifestyle behaviors total score and state anxiety total score, at a level of $p<0.05$ between the healthy lifestyle behaviors total score and trait anxiety total scores.

There isn't any positive and negative relations found among other variables ($p>0.05$).

DISCUSSION and CONCLUSION

As a result of our study, it is seen that there is a positive significant relation between age and healthy lifestyle behaviors (HLSB) in physical education teachers. Besides, there is not found any significant relations between age and state and trait anxiety.

In a study performed on taekwondo athletes, a statistically significant difference hasn't been found between biological age of athletes, training ages, gender, education level of their families, the level of attendance on competitions, upbringing environment and state anxiety and trait anxiety (Yucel, 2003). In another study done by Oshagbemi in the year 2000, a significant relation hasn't been found between the demographic variable stated as in the form of age and trait and state anxiety levels (Oshagbemi, 2000). Yiğiter et all. (2013) haven't found a significant relation between genders of the participants. When the age parameter is taken into consideration, there are findings available supporting our study.

Kaya and colleagues couldn't find a significant relation between the healthy lifestyle behaviors of lecturers and gender (Kaya, 2008). Similarly in the Ozgul's (2003) study titled Students of Physical Education and Sports Academy State and Trait Anxiety Levels, a difference couldn't been found between State Anxiety by gender. Researchers have suggested that this situation stems from being in emotional reactions such as difficulties of education experiences of female students, distrust to environment, because of being away from the families, dereliction, restlessness, over sentimentalism and showing over sensitivity under stress. Again, in the study of Develi (2006) being in parallel to our study, the trait anxiety levels of physical education teachers have been compared. A significant relation couldn't be found between gender and trait anxiety.

The role of achievement motivation on pre competitive anxiety was examined in 73 days comprising youth athletes and a parent of each athlete. Thus, parental definitions of competence held for the child were related to their young athlete's emotional state and vice versa. Physical activity is a good way of getting rid of depressive disorders (Carta et al., 2008). Santos et al., (2005) have examined the effects of aerobic exercises to the depression, anxiety and life quality of old people. It was stated that after the exercise program was applied, their life quality increased, depression and anxiety levels decreased considerably. Depending on these data, they have

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suggested that aerobic exercise programs should be used in old individuals to improve the life quality. Yohannes et al., (2010) conducted a study on the benefits of long term cardiac rehabilitation on depression, anxiety, physical activity and life quality.

As a result; it is thought that improving the opportunities offered to Physical Education Teachers and their working conditions can decrease the trait anxiety levels and contribute to healthy lifestyle behaviors and more efficient and success life psychologically and sociologically. It has been determined that there is a positive relation between anxiety level and healthy lifestyle behaviors. So anxiety affects healthy lifestyle behaviors.

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THE INVESTIGATION OF BODILY/KINESTHETIC INTELLIGENCE AND SPORTSPERSONSHIP ORIENTATION OF STUDENTS IN SCHOOL OF PHYSICAL EDUCATION AND SPORT [1]

BEDEN EĞİTİMİ VE SPOR YÜKSEKOKULUNDA ÖĞRENİM GÖREN ÖĞRENCİLERİN BEDENSEL/KİNESTETİK ZEKA VE SPORTMENLİK EĞİLİMLERİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ

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Öz: Bu çalışmanın amacı beden eğitimi ve spor yüksekokulunda öğrenim gören öğrencilerin bedensel/kinestetik zeka ve sportmenlik eğilimleri arasındaki ilişkinin incelenmesidir. Muğla Sıtkı Koçman Üniversitesi beden eğitimi ve spor yüksekokulunda öğrenim gören 390 öğrenci gönüllü olarak çalışmaya katılmıştır. Katılımcıların %56.7'si erkek (n=221), %43.3'ü kadındır (n=169). Çalışmaya, beden eğitimi ve spor öğretmenliği, antrenörlük eğitimi, spor yöneticiliği ve rekreasyon bölümleri katılmıştır. Toplanan veriler, frekans, bağımsız t-test, tek yönlü Varyans analizi kullanılarak SPSS paket programında analiz edilmiştir. Bedensel/Kinestetik zeka ile kurallara ve yöneticilere saygı, sporda sorumluluklara bağlılık, rakibe saygı boyutları arasında pozitif yönlü korelasyon bulunmuştur. Sonuç olarak, yüksek seviyede bedensel/kinestetik zekaya sahip olan beden eğitimi ve spor yüksekokulu öğrencilerinin sportmenlik davranışlarına daha eğilimli olduğu söylenebilir.

Anahtar Kelimeler: Bedensel/Kinestetik Zeka, Beden Eğitimi, Spor, Sportmenlik

Abstract: The aim of this study was to examine bodily/kinesthetic intelligence and sportspersonship orientation of students in school of physical education and sport. 390 university students in School of Physical Education and Sport at Mugla Sıtkı Koçman University voluntarily participated in the study. 56.7% of the participants was male (n=221), 43.3% of them was female (n=169). Departments of physical education and sports teacher, coach education, sport management and recreation participated in the study. Collected data was analyzed in SPSS by using, frequency, independent t test, and one-way ANOVA. Positive correlations were found between bodily/kinesthetic intelligence and respect for rules officials, respect for one's full commitment toward sport participation, respect and concern for the opponent. Consequently, it can be said that physical education and sport students having higher level of bodily/kinesthetic intelligence are more prone to sportsmanship behaviors.

Key Words: Bodily/Kinesthetic Intelligence, Physical Education, Sport, Sportspersonship

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INTRODUCTION

Bodily/Kinesthetic intelligence refers to perception of the body and mastery in physical movement (Bacanlı, 2007). According to Gardner (2005), bodily/kinesthetic intelligence is the ability to solve problems by using one's body. Bacanlı (2007) has suggested that this intelligence can be developed with different sports and exercises. Fogarty (2008) has stated that the most important word related to this intelligence type is physical movements. Briefly, bodily/kinesthetic intelligence is directly related to people's body perception and mastery experiences in physical activities.

Because this intelligence type is related to physical activities, it possible to interpret students in school of physical education and sport should have high level of Bodily/Kinesthetic intelligence. Most of these students are contestant athletes at individual or team sports.

When sport participation considered, another important concept comes into question. This concept is fair play in sport, which defines social, cultural and moral norms of sport without being limited with awareness of rules (Yıldıran and Sezen, 2006). Concept of fair play first emerged in England as a commercial rule (Erdemli, 2008, p. 386), however this concept has been involved in English education system and school sports.

Education is important in fair play education. Because most of the students in school of physical education and sport are athletes, examining the factors of bodily/kinesthetic intelligence and sportspersonship can be contribute to literature. The aim of this study is to examine bodily/kinesthetic intelligence and sportspersonship orientation of students in school of physical education and sport.

MATERIAL and METHOD

390 university students in School of Physical Education and Sport at Mugla Sıtkı Koçman University voluntarily participated in the study. Bodily/kinesthetic sub-dimension of Multiple Intelligence Inventory, developed by Özden (2003) was used in the study. Profile list by Saban (2001) was used to assess the inventory. Multidimensional Sportspersonship Orientation Scale (MSOS), developed by Vallerand et al. (1997) and adapted to Turkish by Balçıkanlı-Sezen (2010), was used to determine sportspersonship orientation of participant. 56.7% of the participants was male (n=221), 43.3% of them was female (n=169). Departments of physical education and sports teacher, coach education, sport management and recreation participated in the study. Collected data was analyzed in SPSS by using, frequency, and independent t test, one-way ANOVA. 34.6% of participant reported that they do individual sports (wrestling [n=31], taekwondo [n=33], muay-thai [n=10], judo [n=18], cycling [n=11], boxing [n=32]); 56.9% of them reported that they do team sports (football [n=120], volleyball [n=42], basketball [n=32], handball [n=24], hockey [n=2],

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korfball [n=2]). %8.5 of the participant reported that they had no branches.

Cronbach's alpha value of bodily/kinesthetic intelligence scale was found to be .70 while cronbach's alpha value of Multidimensional Sportspersonship Orientation Scale was found to be .93

FINDINGS

Table 1. Differences Between Genders in Terms of Bodily/Kinesthetic Intelligence and Sportspersonship Orientation

Variables	Female			Male				
	n	X	S.D	n	X	S.D	t	p
Bodily/kinesthetic intelligence	169	3.01	.57	221	3.06	.65	.788	p>0.05
Respect for social conventions	169	4.20	.75	221	4.12	.83	-1.01	p>0.05
Respect for rules and officials	169	4.18	.75	221	4.00	.71	-2.31	p<0.05*
Respect for one's full commitment toward sport participation	169	4.40	.72	221	4.38	.76	-.337	p>0.05
Respect and concern for the opponent	169	4.05	.80	221	4.03	.76	-.232	p>0.05

**Significance level is at p<0.05*

Differences between genders in terms of bodily/kinesthetic intelligence, respect for social conventions, respect for rules and officials, respect for one's full commitment toward sport participation, respect and concern for the opponent have been shown in table 1. Significant difference has been found between male and female in terms of respect for rules and officials ($p<0.05$). Female students reported higher scores in respect for rules and officials. No significant differences have been found between genders in terms of the other dimensions ($p>0.05$).

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Table 2. Differences Between Students Doing Individual and Team Sports in Terms of Sodily/Kinesthetic Intelligence and Sportspersonship Orientation

Variables	Individual			Team				
	n	X	S.D	n	X	S.D	t	p
Bodily/kinesthetic intelligence	135	3.11	.50	222	3.02	.67	1.27	p>0.05
Respect for social conventions	135	4.30	.78	222	4.11	.79	2.11	p<0.05*
Respect for rules and officials	135	4.22	.78	222	4.04	.65	2.28	p<0.05*
Respect for one's full commitment toward sport participation	135	4.45	.75	222	4.41	.71	.474	p>0.05
Respect and concern for the opponent	135	4.12	.84	222	4.02	.73	1.12	p>0.05

**Significance level is at p<0.05*

Differences between students doing individual and team sports in terms of bodily/kinesthetic intelligence, respect for social conventions, respect for rules and officials, respect for one's full commitment toward sport participation, respect and concern for the opponent have been displayed in table 2. Significant difference has been found between individual and team sports in terms of respect for social conventions and respect for rules and officials (p<0.05). Students doing individual sports reported higher scores of respect for social conventions and respect for rules and officials than those doing team sports in respect for social conventions and respect for rules and officials. No significant differences have been found between students doing individual and team sports (p>0.05).

Table 3. Differences Between Students Having no Branches and Doing Team Sports in Bodily/Kinesthetic Intelligence and Sportspersonship Orientation

Variables	No branch			Team				
	n	X	S.D	n	X	S.D	t	p
Bodily/kinesthetic intelligence	33	2.84	.61	222	3.02	.67	-1.48	p>0.05
Respect for social conventions	33	3.89	.82	222	4.11	.79	-1.53	p>0.05
Respect for rules and officials	33	3.72	.91	222	4.04	.65	-2.49	p<0.05*
Respect for one's full commitment toward sport participation	33	3.98	.91	222	4.41	.71	-3.08	p<0.05*
Respect and concern for the opponent	33	3.80	.82	222	4.02	.73	-1.63	p>0.05

**Significance level is at p<0.05*

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Differences between students having no branches and doing team sports in terms of bodily/kinesthetic intelligence, respect for social conventions, respect for rules and officials, respect for one's full commitment toward sport participation, respect and concern for the opponent have been shown in table 3. Significant differences have been found between students having no branches and doing team sports in terms of respect for rules and officials and respect for one's full commitment toward sport participation ($p<0.05$). Students doing team sports reported higher scores in respect for rules and officials and respect for one's full commitment toward sport participation. No significant differences have been found in terms of other dimensions ($p>0.05$).

Table 4. Differences Between Students Having no Branches and Doing Individual Sports in Bodily/Kinesthetic Intelligence and Sportspersonship Orientation

Variables	Individual			No Branches				
	n	X	S.D	n	X	S.D	t	p
Bodily/kinesthetic intelligence	135	3.11	.50	33	2.84	.61	2.64	p<0.01**
Respect for social conventions	135	4.30	.78	33	3.89	.82	2.66	p<0.05*
Respect for rules and officials	135	4.22	.78	33	3.72	.91	3.17	p<0.01**
Respect for one's full commitment toward sport participation	135	4.45	.75	33	3.98	.91	3.06	p<0.01**
Respect and concern for the opponent	135	4.12	.84	33	3.80	.82	1.97	p>0.05

Differences between students having no branches and doing individual sports in terms of bodily/kinesthetic intelligence, respect for social conventions, respect for rules and officials, respect for one's full commitment toward sport participation, respect and concern for the opponent have been displayed in table 4. Significant differences have been found between students having no branches and doing individual sports in terms of bodily/kinesthetic intelligence ($p<0.01$), respect for social conventions ($p<0.05$), respect for rules and officials ($p<0.01$), respect for one's full commitment toward sport participation ($p<0.01$). No significant difference has been found in terms of respect and concern for the opponent ($p>0.05$). Students doing individual sports reported higher scores in all dimension except for respect and concern for the opponent when compared to students having no branches.

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Table 5. Correlations Between Bodily/Kinesthetic Intelligence, Respect For Social Conventions, Respect For Rules and Officials, Respect for One's Full Commitment Toward Sport Participation, Respect and Concern For the Opponent

Variables	1	2	3	4	5
	4.16±0.65	4.16±0.79	4.08±0.73	4.39±0.74	4.04±0.78
1) Bodily/kinesthetic	1	.089	.148**	.113*	.113*
2) Respect for social conventions		1	.656**	.658**	.518**
3) Respect for rules and officials			1	.736**	624**
4) Respect for one's full commitment toward sport participation				1	.578**
5) Respect and concern for the opponent					1

*** Significance level is at p<0.01; *Significance level is at p<0.05; mean± standard deviation; n=390*

Correlations between bodily/kinesthetic intelligence, respect for social conventions, respect for rules and officials, respect for one's full commitment toward sport participation, respect and concern for the opponent have been displayed in table 5. Positive correlations have been found between bodily/kinesthetic intelligence and respect for rules officials (r=.148, p<0.01), respect for one's full commitment toward sport participation (r=.233, p<0.01), respect and concern for the opponent (r=.113, p<0.05). As expected, positive correlations were found between dimensions of sportspersonship orientation.

DISCUSSION and CONCLUSION

The aim of this study was to examine bodily/kinesthetic intelligence and sportspersonship orientation of students in school of physical education and sport. According to analysis between genders, although it was found that female students reported higher scores in all sub-dimensions of sportspersonship orientation than males, significant difference was only found in the dimension of respect for rules and officials. It can be concluded that female students are more sensitive for respecting rules and officials. Gürpınar (2014) has found that female students adopt fraud and loving competition less than males and they adopt fair win more than males.

No significant difference was found between genders in terms of bodily/kinesthetic intelligence. This result is consistent with some research in literature (Neville, 2000; Loori, 2005; Furnham ve Chamorro-Premuzic, 2005; Azar, 2006; Baba, 2012).

Although students participating in individual sports reported higher scores in all dimensions,

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statistically significant difference was only found between individual and team sports in terms of respect for social conventions and respect for rules and officials. Students participating in team sports reported higher scores in all dimensions, however significant differences was found between students having no branches and doing team sports in terms of respect for rules and officials and respect for one's full commitment toward sport participation. Significant differences was found between students having no branches and doing individual sports in terms of bodily/kinesthetic intelligence, respect for social conventions, respect for rules and officials, respect for one's full commitment toward sport participation, respect and concern for the opponent. Students doing individual sports reported higher scores in all dimension when compared to students having no branches.

In this study, it was aimed to examine sportsmanship orientation and bodily/kinesthetic intelligence levels of students in school of physical education and sport. Being a sportsman and playing fair seems quite difficult recently. "Winning at all costs" may cause unfair, violent and unethical behaviors in sport. Priest, Krause and Beach (1999) used the same idiom for American culture. These behaviors can be the outcome of the societies expectation that is too difficult to reach.

This study provides descriptive and relational evidence that new education programs in physical education and sport should include more lessons in which students learn the "winning at all costs" is not everything in sport. Also, this study can contribute to literature by examining the differences between team and individual sports in terms of bodily/kinesthetic intelligence and sportspersonship orientation.

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Table 1 indicates …….

Table 1. ……results.

Variable / Group

N

Xort.

Ss

F / t

p

……

…..

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……

…..

…..

…..

*Meaningfulness Value

When Table 1 is analyzed, it is seen that …… (Interpretation).

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