www.dergipark.org.tr/jessm
http://www.sporbilimleri.org.tr/
Volume/Cilt 1, Number/Sayı 1, 2019

ISSN: 2687-265X

Sahibi (Owner)

Spor Bilimleri Derneği adına

(On Behalf of Sport Science Association)

Dr. Mehmet GÜNAY

Editör ve Yazı İşleri Müdürü

(Editor in Chief and Managing Editor)

Dr. Erkan Faruk ŞİRİN

SPOR BİLİMLERİ DERNEĞİ'nin bilimsel yayın organı ve yaygın süreli yayınıdır.

(The official scientific journal of Sport Science Association)

"Açık Erişim Dergi" yılda 3 kez (Nisan, Ağustos, Aralık) yayınlanır.

"Open Access Journal" published 3 times (April, August, December) a year.

Yönetim Yeri Adresi (Administration Address)

Spor Bilimleri Derneği

Genel Merkezi

Adres: Mebusevleri Mahallesi Mareşal Fevzi Çakmak Sokak 45/6 Çankaya 06570 ANKARA

Telefon : (0312) 417 11 15

jessm@sporbilimleri.org.tr

Yayın Koordinatörleri

(Publishing Coordinators)

Dr. Murat ERDOĞDU

Dr. Mehmet Fatih YÜKSEL

Tasarım (Design)

Dr. Yahya Gökhan YALÇIN

Dergi Basım Tarihi: 17.12.2018

The Journal of Eurasia Sport Sciences & Medicine

Avrasya Spor Bilimleri ve Tıp Dergisi

The Journal of Eurasia Sport Sciences & Medicine

Avrasya Spor Bilimleri ve Tıp Dergisi

ISSN: 2687-265X

Volume 2, Issue 1, April 2020

İÇİNDEKİLER

(CONTENTS)

2020 2(1)

Page

Examination of Psychological Resilience Levels of Basketball and Tennis Players Considering the Gender Variable
Alpay BÜLBÜL, Gamze AKYOL, Hacı Murat ŞAHİN..... **1-9**

A Comparison of Physical Structure and Motoric Characteristics in Basketball by Age Categories
Çağdaş Özgür CENGİZEL, Elvan ÖZ, Elif CENGİZEL..... **10-16**

Experiences of Sedentary Middle Age Group Housewives Participating in Step Aerobics Course
Gamze AKYOL, Kıvanç SEMİZ……..…..... **17-25**

www.dergipark.org.tr/jessm

The Journal of Eurasia Sport Sciences & Medicine

ISSN: 2687-265X

J Eurasia Sports Sci Med
http://dergipark.gov.tr/jessm

Volume 2, Issue 1
April 2020, 1-9

ORIGINAL RESEARCH

Examination of Psychological Resilience Levels of Basketball and Tennis Players Considering the Gender Variable

Alpay BÜLBÜL [1]
Gamze AKYOL [2]
Hacı Murat ŞAHİN [3]

[1] Sports Science Faculty, Sinop University, Sinop, Turkey.

[2] Sports Science Faculty, Giresun University, Giresun, Turkey.

[3] Sports Science Faculty, Aydın Adnan Menderes University, Aydın, Turkey.

Corresponding author: G. Akyol

e-mail: gamz.akyoll@gmail.com

Received: 08.05.2020

Accepted: 26.06.2020

Abstract

In the study pursued in order to determine the psychological resilience levels of individuals who are interested in basketball and tennis sports in university teams and the differences between them considering the gender variable, gender variable levels are given in percentages, and resilience levels have been studied by comparing with their gender with the T-test. Population consists of 50 female and 51 male players and 30 female and 30 male tennis players, in total 161 players. In order to determine to resilience levels of the players, "Psychological resilience scale" developed by Friborg et al. (2005) has been applied. According to the research results, it is concluded that constitutional style, perception of future and social competence psychological resilience sub-dimensions of the tennis players are better than basketball players, family cohesion, social competence and social resources sub-dimensions and total psychological resilience perception of female players are more successful than male players.

Keyword: psychological resilience, gender variable, tennis, basketball.

To cite this article; Bülbül, A., Akyol, G., & Şahin, H.M. (2020). Examination of psychological resilience levels of basketball and tennis players considering the gender variable. J Eurasia Sports Sci Med, 2(1), 1-9.

INTRODUCTION

In recent years, significant differences have stood out in players' structures in many of the sport fields. Briefly when compared with the former players, psychological structures of today's players are apparently different (Konter, 2003). In current years in which professionality is high, the effects of financial gains and loss on players cause pressure on them substantially. The way of dealing with this kind of pressure is management of players this pressure atmosphere in the best way.

Reaching success in sport is possible with player's using his/her potential at the highest level. First of all, getting ready for result base competition, in other words getting ready with the winning-oriented mentality only can prevent the player from thinking right and revealing his/her abilities. It has been long known that the on-site performances of players are affected by many factors. The most important ones of them can be; situation of the opponent, the importance of the match, supporters' cheers, traumatophobia, live broadcast of the match. Dealing with all of them is that while the psychological preparations of the players are being made, reminding and suggesting that everything is in their own hands, and the control of success and failure is in his/her hands. Since this kind of mentality will improve player's self reliance, the body is expected to react positively as well to perform any activity or technique in the competition (Konter, 2003).

Psychological resilience is described as a personality trait that consists of three dimensions; commitment, control and difficulty. (Crowley et al., 2003). Commitment is individual's being involved in daily events without staying out of events quiescently; control is a tendency to believe and behave in a way that affects and changes them instead of feeling sadness when encounter with difficulties; difficulty is a natural part of variance and daily life, a stimulus for progress rather than a factor threatening security. Consequently, psychological resilience can reduce the negative factors of life which are making stress or can be a shield against them. (Maddi et al., 2006). In recent years, researchers have described many stress reasons that players face with (Mckay et al.; Scanlan et al., 1991). They have shown that psychologycial features help elite players to overcome problems and to transfer them in the path to perfection. (MacNamara et al., 2010a, 2010b).

Although extensive psychological resilience studies have been conducted in many fields, studies generally concentrate on children, adults and adults' childhood period in which they have faced famial problems which effective in their life (Greef & Human, 2004). Despite the fact that there are less study in the world about players psychological resilence, these studies are qualitative studies (Fletcher & Sarkar, 2012; Galli & Vealey, 2008; Sarkar & Fletcher, 2014). As far as we examine, a study comparing the psychology players has not been conducted yet in Turkey. Therefore, this study purposes to determine that what differences between gender variable and psychological resilence of the individuals who are proffessionally interested in basketball and tennis.

METHOD

This chapter includes information about the model of the study, population and sample, data collection method, data collection tool and analysis of data.

The Model of the Study

The study has been carried out by using single survey model as descriptive in order to determine the psychological resilence levels of players.

The Population and Sample

The population of this study is consisted of the tennis and basketball players who played in 2013-2014 season Turkey Intervarsity 1st League. The sample of the study consisted of 50 female and 51 male basketball player and 30 female and 30 male tennis player, in total 161 players who are selected using random sampling methods. Players who could be reached at the time of study, have been evaluated within the scope of the study group of the study.

Data Collection Method

Data necessary for the study has been collected from the players directly involved in study group. In order to determine the psychological resilence levels of the players who are the dependent variable of the study, "Psychological resilience scale" developed by Friborg and et al. (2005) has been used.

Data Collection Tool

Psychological Resilience Scale for Adults: developed by Friborg et al.(2005) and translated into Turkish by Basım and Çetin (2011). The scale including 33items in total, consists of six dimensional structure: structural style, perception of the future, family cohesion, self-perception, social competence and social resources. According to these dimensions, distributions of materials are consisted of as structural style; item 3, 9, 15 and 21 (in total 4 items) , perception of the future; item 2, 8, 14 and 20 (in total 4 items), family cohesion; item 5, 11, 17, 23, 26 and 32 (in total 6 items), self-perception; item 1, 7, 13, 19, 28 and 31 (in total 6 items), social competence; item 4, 10, 16, 22, 25 and 29 (in total 6 items) and social resources; item 6,12, 18, 24, 27, 30 and 33 (in total 7 items). In these items there are gap-filling statements stating provisions such as " In case of an unexpected situation. I can find solutions always / I can not predict what to do often", " I know my future goals. How to achieve them / I am not sure how to do this", " New friendship topic is something which / I can do easily / I have difficulty in". Moreover, there is a marking section with five separate boxes between two appropriate answers for this answers. Participants are asked to what extend they are agree with the statements in items and are asked to check the box which they think close the most appropriate one. In addition to this, with the intention to prevent prejudicial evaluations of the individuals answered the scale, answers which present positive and negative provisions, are placed in different parts of the scale. With regard to calculating released in the original form, it is accepted that high score signs high psychology in this study.

Two different samples have been used for the validity of the scale by Basım and Çetin (2001). This approach which grounds on verification of results from one sample in another sample, has aimed to increase the generalizability of the study by this means. To this end, Basım and Çetin (2011) have used two sample groups consisting of 350 students and 262 transactors in the study.

Basım and Çetin (2011) have analyzed the test-retest reliability and internal consistency for the reliability of the psychological resilience scale for adults. Related to the test-retest reliability, Pearson correlation coefficient of the subscales of the scale adopted 23 days apart

between two sample groups; for the self-perception is 0.72 ($p<0.01$), for perception of the future is 0.75 ($p<0.01$), for structural style is 0.68 ($p<0.01$), for social competence is 0.78 ($p<0.01$), for family cohesion is 0.81 ($p<0.01$) and for social resources is 0.77 ($p<0.01$) (Basım & Çetin, 2011). Regarding the internal consistency of the scale, Cronbach Alpha values of sub dimensions of the both samples have been analyzed; it has been detected that Cronbach Alpha coefficients of sub dimensions varied between 0.66 and 0.81 for the student sample and 0.68 and 0.79 for the employee sample (Basım & Çetin, 2011). In addition, the total Cronbach Alpha values of the scale have been calculated as 0.86 for the both sample groups (Basım & Çetin, 2011).

Analysis of Data

Arithmetic mean, standard deviation, percentage and frequency values of all data have been calculated for descriptive statistics. Student-t test has been used for the difference between the two groups in testing the differences between genders. In the event of difference, Benferroni post-hoc test has been used in order to find out the reason of differences. SPSS 20 package program has been used in all the statistical analysis and significance has been tested at the level of 0.05.

FINDINGS

In this section psychological resilience levels based on the gender variable are presented in tabular for the objective of the study.

Table 1. Sex Distribution Ratio

Sex	Number	%
Female	76	47.2
Male	85	52.8
Total	161	100

When Table I is analyzed, it is seen that 47.2% of the participants are female and 52.8% are male. Levels of participation are almost close to each other.

Table 2. Psychological Factor Score Distributions of the Players

Psychological Resilience Sub-Dimensions	N	A.M	S.D	At Least	At Most
Structural Style	161	14.16	3.65	4	20
Perception of the Future		15.34	3.74	8	20
Family Cohesion		21.55	4.86	10	30
Self Perception		23.00	5.26	6	30
Social Competence		22.37	5.27	10	30
Social Resources		25.88	6.04	11	35

In Table II, arithmetic mean and standard deviation values of the scores received by the players from psychological sub-dimensions are presented. According to this, social resources are high in the sub-dimension (A.M 25.88 SD 6.04).

In Table III, arithmetic mean and standard deviation values of the scores received by the players from psychological sub-dimensions are presented in terms of gender variable. According to this, social resources are high in the sub-dimension in female and male (A.M F 27.01 M 24.86 SD F 6.17 M 5.77).

Table 3. Psychological Factor Score Distributions of the Players According to Gender Variable (F: female, M: male)

Psychological Fac./ Gender	N		A.M		SD		At Least		At Most	
	F	M	F	M	F	M	F	M	F	M
Structural Style	76	85	14.20	14.12	3.76	3.57	4	4	20	20
Perception of the Future			15.89	14.85	3.91	3.54	8	8	20	20
Family Cohesion			22.38	20.81	5.14	4.49	10	10	30	30
Self Perception			23.41	22.64	5.51	5.04	10	6	30	30
Social Competence			23.37	21.48	5.31	5.11	10	10	30	30
Social Resources			27.01	24.86	6.17	5.77	11	11	35	35

Table 4. Student-t Test Table Demonstrating Difference between Psychological Resilience Sub-dimensions Considering Gender Variable

Psychological Resilience Sub-dimesions and Total Score	Gender	N	A.M	S.D	t	p
Structural Style	Female	76	14.20	3.76	.138	.890
	Male	85	14.12	3.57		
Perception of the Future	Female	76	15.89	3.91	1.786	.076
	Male	85	14.85	3.54		
Family Cohesion	Female	76	22.38	5.14	2.068	.040*
	Male	85	20.81	4.49		
Self Perception	Female	76	23.41	5.51	.929	.354
	Male	85	22.64	5.04		
Social Competence	Female	76	23.37	5.31	2.295	.023*
	Male	85	21.48	5.11		
Social Resources	Female	76	27.01	6.17	2.288	.023*
	Male	85	24.86	5.77		
Total Score	Female	76	126.26	23.10	2.170	.031*
	Male	85	118.75	20.81		

When Table IV is analyzed, as a result of Student-t test, there is a significant difference between family cohesion, social competence and social resources psychological sub-dimensions and total scores in terms of genders ($p<0.05$). In all these sub-dimensions and and total scores, psychological resilience scores of females are higher. And this means that psychological resilience of female players is better than the psychological resilience of male players.

Table 5. Student-t Test Table Demonstrating Difference between Psychological Resilience Sub-dimensions in terms of Sport Branches of the Players Considering Gender Variable

Psychological Factor	Branch	N	A.M	S.D	t	p
Constructural Style	Basketball	101	13.70	3.49	2.061	.041*
	Tennis	60	14.92	3.81		
Perception of the future	Basketball	101	14.53	3.66	-.687	.000*
	Tennis	60	16.70	3.51		
Family Cohesion	Basketball	101	21.63	4.73	-.273	.785
	Tennis	60	21.42	5.10		
Self Perception	Basketball	101	22.72	4.91	-.866	.388
	Tennis	60	23.47	5.83		
Social Competence	Basketball	101	21.73	5.33	-.017	.045*
	Tennis	60	23.45	5.03		
Social Resources	Basketball	101	25.52	5.82	-.956	.341
	Tennis	60	26.47	6.40		
Total Score	Basketball	101	119.85	22.51	-1.830	.069
	Tennis	60	126.42	21.14		

When Table V is analyzed, as a result of Student-t test, there is a significant difference (p>0.05) between tennis players and basketball players in structural style, perception of the future and social competence psychological sub-dimensions and total scores in terms of genders. In all these sub-dimensions, arithmetic mean scores of tennis players are higher than the basketball players. And this means that psychological resilience scores in sub-dimensions of tennis players are higher than basketball players.

ARGUMENT

The objective of this study is to analyze the psychological resilience level of tennis and basketball players who played in university teams in terms of gender variation and to compare with each other.

Despite the fact that there is not a significant difference (p>0.05) between psychological resilience total scores of tennis and basketball players according to study results, structural style, it is observed that perception of the future and social competence sub-psychological sub-dimensions tennis players are better than the basketball players. Besides, it is observed that, there is a significant difference (p<0.05), when compared with psychological resilience sub-dimensions gender variable of the players.

Despite the fact that psychological resilience has been evaluated in many occupational gropus and community in our country earlier, similar studies have not been exercised in players and sport organisations and community. In this study, psychological resilience scores of the basketball players has determined as 119.85±22.51 and, psychological resilience scores of the tennis players as 126.42±21.14 and statistically there is not a significant difference between them. Sezgin (2009), in the study including 347 elementary school teachers, has reported that psychological resilience avarage point is 28.71 and in branch teachers it is 28.01. The researcher has reported that psychological resilience levels don't change according to branch. These results are parallel with our study results reporting psychological resilience does not change in sports branches. Tümlü and Recepoğlu (2013) have reported that psychological resilience levels of academic staff do not differ significantly in terms of the title variable in studies carried out on 94 instructors. Besides, researchers have reported that although there is not a significant difference statistically, psychological resilience level of the proffesors is the highest (x=56.30), psychological resilience level of the associate professors is the lowest (x=37.92). They also reported that the low level of psychological resilience of associate professors has been evaluated as an unexpected result.

In this study, although it has been found out that structural style, perception of the future and social competence psychological sub-dimensions of the tennis players are significantly (p<0.05) better than the basketball players, there is not a significant difference between two groups in terms of total scores. Tennis players are significantly (p<0.05) better than the basketball players in terms of structural style, perception of the future and social competence psychological sub-dimensions. Although the reason of this cannot be known exactly, it may be baceause of the fact that tennis players are exposed to less race and organisation stress and/or their personal stress level is lower than the basketball players (Sarkar & Fletcher, 2014). The other reasons may be the possibility of features that can increase the perception of psychological resilience such as being positive, motivation, reliance, focus and social support (Sarkar & Fletcher, 2014).

When psychological resilience levels of the players in terms of gender have been analyzed, it has been found that there is a significant difference (p<0.05) among female and

male players between family cohesion, social competence and social reources pyschological sub-dimensions and total scores. When the avarage points have been examined, it can be seen that female players have significantly ($p<0.05$) better psychological resilience levels than the male players in all the sub-dimensions and total scores. Results of the study on the effect of gender on psychological resilience are contradictory in the related field literature. While some of them are supporting our study result, some of them are reporting contrary results. Hannah and Morrisey (1986) have found out that psychological resilience level of females are higher than male players in the study in which they have come to conclusion that psychological resilience level of young is related with gender. Tümlü and Recepoğlu (2013) have reported that psychological resilience level of the university academic staff has not affected from gender variable significantly in their study on 94 instructors. Similarly Harrison et al., (2002) have reported that gender is not effective on psychological resilience.

High level of psychological resilience of female players compared to male players, because of the differences in traditional female and male roles, it is expected that there can be differences in the way the two genders approach to the events. Males react logically to the events in the environment and tend to avoid emotional behaviours and help. (Hortaçsu, 2003). Consequently, to overcome some problems especially at work, because of characteristics attributed to them by Turkish society, their tend to avoid from help for their problems can cause to decrease of their psychological resilience with increasing responsibilities over time. Hence, having social support as a protector item of psychological resilience, can be explained as high level of psychological resilience of female compared to male as social supports are more common among female.

CONCLUSION and RECOMMENDATIONS

Gender is seen relative with psychological resilience as a genetic personal factor and in children at risk, psychological resilience of the girls is higher (Kumpfer, 1999). On the other hand, boys are indicated to be more vulnarable against a range of risk factors like psychopathology of the parents and poverty (Luthar, 1999). Besides, males react more negative to family breakups and social impacts when compared to females in behavioral meaning, they have higher risk on external behavioral problems (Bolger et al., 1995) and low academic achievement (Ripple & Luthar, 2000). In addition to this, effect of the gender can vary depending on the age of individual. For example, while primary school age boys have been more affected by economic difficulties compared to girls (Bolger et al., 1995) girls can be affected more by this situation compared to boys in their youth period (Juarez et al., 1997; as cited in Luther, 1999). Moreover, it has been emphasized that children, regardless of gender, are more vulnarable and can easily be injured in many respects to all risk factors than the adolescent and young (Luthar, 1999).

Research Results

1. The structural style, perception of the future and social competence psychological sub-dimensions of tennis players have been found to be better than basketball players.

2. Female players have been found to be more succesful than male players in their family cohesion, social competence and social resources sub-dimensions total psychological resilience perception.

SUGGESTIONS

1. Various support programs can be recommended to increase the psychological resilience of male players. Programs can be recommended to increase the psychological resilience of female players to higher level.

2. Studies to increase psychological resilience in team sports such as basketball can be suggested.

3. By virtue of tennis being an individual sport, these features are more likely to be better than basketball players. Much more comprehensive studies are needed in this field in order to reveal exactly where the difference between these two sports branches comes from.

4. In this study, social support has not been considered. This is the important limitedness of the study. The reason of difference between genders could be explained better if social support was considered. Consideration of psychological resilience of players and social support relation in later studies can give important knowledge about this subject. Revealing the possible relationship between psychological resilience and social support, which are expressed as stress resistance resources in players, can be important especially in terms of hindering decrease of performance.

5. Supporting of this kind of studies with qualitative studies can enable psychological resilience of players to be understood better.

6. Considering that the structure of the sport is different, instead of scales for normal individuals, pyschological resilience studies determined by severally scales to be prepared for players and perhaps to be developed for team and individual sports can attribute more to the field.

7. In various sport branches, the scope of study can be extended with a wider sample group by doing researches which analyzing the satisfaction with life and psychological resilience of the players.

REFERENCES

Basım, H.N., & Çetin, F. (2011). Yetişkinler için Psikolojik Dayanıklılık Ölçeği'nin Güvenilirlik ve Geçerlilik Çalışması, *Türk Psikiyatri Dergisi*.

Bolger, K. E., Patterson, C. J., Thompson W. W., & Kupersmidt, J. B. (1995). Psychosocial adjustment among children experiencing persistent and intermittent family economic hardship. *Child Development*, *66*, 1107-1129.

Crowley, B. J., Hayslip, B., & Hobdy, J. (2003). Psychological hardiness and adjustment to life events in adulthood. *Journal of Adult Development, 10*(4), 237-248.

Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise, 13,* 669–678.

Friborg, O., Barlaug, D., Martinussen, M., & ark. (2005) Resilience in Relation to Personality and Intelligence. *Int J Methods Psychiatr Res, 14*(1), 29-42.

Greeff, A. P., & Human, B. (2004). Resilience in families in which a parent has died. *The American Journal of Family Therapy, 32*, 27-42.

Galli, N., & Vealey, R. S. (2008). "Bouncing back" from adversity: Athletes' experiences of resilience. *The Sport Psychologist, 22*, 316–335.

Hannah, T. E., & Morrisey, C. (1986). Correlates of psychological hardiness in Canadian adolescents. *The Journal of Social Psychology, 1271*(4), 339-344.

Harrisson, M., Loiselle, C. G., Duquette, A., & Semenic, S. E. (2002). Hardiness, work support and psychological distress among nursing assistants and registered nurses in Quebec. *Journal of Advanced Nursing, 38*(6), 584-591.

Hortaçsu, N. (2003). Çocuklukta ilişkiler: Ana baba, kardeş ve arkadaşlar (1.Baskı). Ankara: İmge Kitabevi.

Kumpfer, K. L. (1999). Factors and processes contributing to resilience: the resilience framework. (Ed: M. D. Glantz ve J. L. Johnson) *Resilience anddevelopment: Positive life adaptations*. New York: Kluwer Academic/Plenum Publishers.

Konter, E. (2003). Myths and truhts in sport psychology applications. Dokuz Eylül Yayıncılık, İzmir.

Luthar, S. (1999). *Poverty and children's adjustment*. New-bury Park, CA: Sage.

Maddi, S. R., Harvey, R. H., Khoshaba, D. M., Lu, J. L., Persico, M., & Brow, M. (2006). The personality construct of hardiness, III: Relationships with repression, innovativeness, authoritarianism, and performance. *Journal of Personality, 74*(2), 575-598.

MacNamara, A., Button, A., & Collins, D. (2010a). The role of psychological characteristics in facilitating the pathway to elite performance. Part 1: Identifying mental skills and behaviors. *The Sport Psychologist, 24*, 52–73.

MacNamara, A., Button, A., & Collins, D. (2010b). The role of psychological characteristics in facilitating the pathway to elite performance. Part 2: Examining environmental and stage-related differences in skills and behaviors. *The Sport Psychologist, 24*, 74–76.

McKay, J. Niven, A. G. Lavallee, D., & White, A. (2008). Sources of strain among UK elite athletes. *The Sport Psychologist, 22*, 143–163.

Ripple, C. H. ve Luthar, S. (2000). Academic risk among iner-city adolescents: The role of personal attributes. *Journal of School Psychology*, *38*, 277-298.

Sarkar, M., & FletcheR, D. (2014). Psychological resilience in sport performers: a review of stressors and protective factors. *J Sports Sci. 32*(15), 1419-34.

Sezgin, F. (2012). İlköğretim okulu öğretmenlerinin psikolojik dayanıklılık düzeylerinin incelenmesi. *Kastamonu Eğitim Dergisi*, *20*(2), 489-502.

Scanlan, T. K., Stein, G. L., & Ravizza, K. (1991). An in-depth study of former elite figure skaters: III. Sources of stress. *Journal of Sport and Exercise Psychology, 1*, 102–120.

Tümlü, A. Ü., & Recepoğlu, E. (2013). Üniversite akademik personelinin psikolojik dayanıklılık ve yaşam doyumu arasındaki ilişki. *Yükseköğretim ve Bilim Dersi, 3*(3), 205-213.

The Journal of Eurasia Sport Sciences & Medicine

ISSN: 2687-265X

J Eurasia Sports Sci Med
http://dergipark.gov.tr/jessm

Volume 2, Issue 1
April 2020, 10-16

ORIGINAL RESEARCH

A Comparison of Physical Structure and Motoric Characteristics in Basketball by Age Categories

Çağdaş Özgür CENGİZEL [1]
Elvan ÖZ [2]
Elif CENGİZEL [1]

[1] Sports Science Faculty, Department of Trainer Education, Gazi University, Ankara, Turkey.

[2] Institute of Health Sciences, Gazi University, Ankara, Turkey.

Corresponding author: E. Cengizel

e-mail: elifoz@gazi.edu.tr

Received: 16.06.2020

Accepted: 26.06.2020

Abstract

The purpose of this study is comparing physical and motoric characteristics in youth basketball players according to age categories. The study included 80 male basketball players belonging to three different categories (n_{junior}: 13, n_{youth}: 36, n_{little}: 31) as volunteers. Before the research, parents' consent documents were obtained from the parents of the players. In the study, body height, body weight, 20m sprint, Illinois agility test and horizontal and vertical jump tests were applied. One-way analysis of variance was used to determine the differences between categories. Measurement values that provide variance homogeneity were evaluated by Tukey statistics ($p<0.05$). A significant difference was found between the little team and other teams in all parameters ($p<0.05$). In this study, sprint, agility and jumping performance, and physical characteristics were significantly different between groups in the junior, youth and little categories. These data provide basketball coaches with information about the physical and motoric characteristics of the specified categories.

Keyword: basketball, speed, agility, jumping, age categories.

To cite this article; Cengizel, Ç.Ö., Öz, E., & Cengizel, E. (2020). A comparison of physical structure and motoric characteristics in basketball by age categories. J Eurasia Sports Sci Med, 2(1), 10-16.

This article was orally presented in International Sports and Wellness for All Congress.

INTRODUCTION

In recent years, the monitoring of sports performance, especially the monitoring and evaluation of physical and motoric development of youth athletes have become increasingly more important. Coaches monitor their athletes' performance in objective ways, rather than subjective ways, through performance tests and a number of physical measurements. While providing this, coaches need quantitative data on the development of different age categories.

Basketball is a sport that requires all of the basic motoric characteristics such as strength, speed, endurance, mobility and coordination all together (Canlı, 2017) and involves high-intensity activities such as jumping (rebounds, blocks, and shots), rolls, dribbling, sprinting, and screen (Delextrat & Cohen, 2009). It is a competitive team sport that has its own technical and tactical foundations and is played by considering the limits of the players' time, place and participation (Ferreira & De Rose, 2003).

Performance in basketball not only depends on technical, tactical and psychological characteristics, but also on anthropometry (Bayios, Bergeles, Apostolidis, Noutsos, & Koskolou, 2006) and physical fitness (jumping strength, agility with and without ball, etc.) (Erčulj, Blas, Čoh, & Bračič, 2009; Ziv & Lidor, 2009). Moreover, longer height and body size make important contributions to high performance in basketball (Ziv & Lidor, 2009, 2010). Especially in youth basketball players, being tall offers more advantages against the opponents. Therefore, it would not be wrong to state that somatic characteristics are an important and reliable indicator of basketball players' performance (Drinkwater, Pyne, & Mckenna, 2008).

Motor skills play an important role in the selection of young basketball players and their progress in game performances (Erčulj, Dežman, & Vučković, 2003). Although it is accepted that motoric characteristics are at the forefront of basketball, it is not correct to connect success to a single criterion (Savaş, Yüksel, & Uzun, 2018). Ball games are a comprehensive whole that includes physical, technical, mental and tactical characteristics (Tsunawake et al., 2003).

Competitions within the scope of basketball activities are separated by age categories defined by the Turkish Basketball Federation. 12 to 18 years of age is the transition period between childhood and adulthood (Dolezajova, Gallova, & Lednicky, 2019). The physical structure of a child develops depending on his/her age. With age, the size of the body grows, the functions of the internal systems develop, and the maturation process of the organism progresses (Witkowski, Piepiora, Migasiewicz, Maśliński, & Salachna, 2018). During development around this time, there is a rapid improvement in physical performance, with sudden increases in size and weight, mainly due to hormones and maturation (Torres-Unda et al., 2016). Performance is improved during adolescence and youth with appropriate training and is raised to higher levels in adulthood (Tsunawake et al., 2003). In order to reach high performance, it is important to monitor the physical and motoric characteristics of the athletes in the age categories and to determine the differences. The purpose of this study is, therefore comparing physical and motoric characteristics in youth basketball players according to age categories.

METHOD

Subjects

The study included 80 male basketball players belonging to three different categories (n_{junior}: 13, n_{youth}: 36, n_{little}: 31) as volunteers. The age groups were determined as Under 14 Little, Under 16 Youth, and Under 18 Junior categories as indicated by the Turkish Basketball Federation's Basketball Domestic Leagues instructions (TBF, 2019). Before the research, parents' consent documents were obtained from the parents of the players. Before the study started, the subjects were informed about the purpose of the study, the tests to be applied, and possible risks. Athletes who have had injury and/or surgery in the last six months, do not regularly continue training in team groups, belong to a the minor age group, and did not complete all tests or voluntarily dropped them were not included in the research. All measurements were made in Ankara Çankaya High School's rubber floor basketball court accompanied by three supervisor coaches.

Research Design

In the study, body height, body weight, 20m sprint, Illinois agility test and horizontal and vertical jump tests were applied. Measurements were conducted on two different days. On the first day, physical characteristics of the subjects, age and years of experience, vertical jump and 20 m sprint tests were completed. On the second day of measurement, horizontal jump and agility test were applied. A rest day was given between the measurement days and a full rest between the tests. A standard 25-minute general and special warm-up protocol was applied before the tests were performed. During the measurements, athletes were encouraged verbally. Subjects who could not apply the test protocol correctly were given another chance to try after full rest.

Vertical jump test: To perform the test, a 200 cm long, 60 cm wide white plate was mounted on the wall with a height of 155 cm from the floor. The participant was first asked to touch the highest point he could reach out by extending his arm while standing and then touch the highest point he could reach by jumping. The distance between the height that the participant could reach while standing and the point he could touch by jumping was measured in cm. This score was determined as the vertical jump value of the subjects. This test was repeated three times with rest intervals and the best result was recorded as score (Kamar, 2008).

Horizontal jump test: The participant's toes were behind the starting line and the subject was allowed to bend his knees, arms, waist. With the command heard, the subject, pulling the arms backwards, tried to jump as far as possible from the starting line. The distance between the start line and the participant's closest heel to this line was recorded as the score of the participant. The participant had two trials and the one with the best result was recorded as the subject's horizontal jump score (Kamar, 2008).

20 m sprint test: Speed performance was determined by Newtest Powertimer 2000 photocell. A 20 m sprint distance was determined in the basketball court. Subjects performed warm-up and stretching exercises before the test started. The test was repeated twice and the best value was recorded in the form of measurement in seconds. Full rest was given between repetitions.

***Illinois agility test*:** Agility performance was determined by Newtest Powertimer 2000 photocell. An Illinois agility test parkour (5 m wide, 10 m long and consisting of three cones

lined up on a straight line at 3.3 m intervals in the middle section) was set up in the basketball court. Subjects left the starting line of the test parkour, lying face down and hands on the floor at shoulder level. The test was run once. When there were faulty applications, the test was terminated and the subject was asked to re-perform after complete rest. Time to finish the parkour was recorded in seconds.

Data Analysis

Analysis of data obtained as a result of measurements was realised with Sigma Plot 11.0 (Systat Software, Inc) software. All data are presented as average±standard deviation One-way analysis of variance was used to determine the differences between categories. Measurement values that provide variance homogeneity were evaluated by Tukey statistics ($p < 0.05$).

FINDINGS

In our study, there are 80 male basketball players from three different age categories. Junior and youth team's body height and body weight were found to be significantly higher than little team basketball players (Junior team 183.2 ± 5.6 cm & 80.0 ± 9.5 kg, youth team 179.6 ± 7.7 cm & 72, 9 ± 10.6 kg, little team 167.3 ± 9.4 cm & 58.3 ± 12.4 kg). It was determined that there was an increase in size and weight with increasing age (Table 1).

Table 1. Characteristics of the Subjects

	Junior [(a)] (n=13)	**Youth[(b)] (n=36)**	**Little [(c)] (n=31)**
Age (year)	16.2 ± 0.4	14.5 ± 0.5	12.6 ± 0.5
Training Age (years)	6.1 ± 1.9	6.8 ± 2.0	6.7 ± 1.9
Height (cm)	183.2 ± 5.6[c]	179.6 ± 7.7[c]	167.3 ± 9.4[a, b]
Body weight (kg)	80.0 ± 9.5[c]	72.9 ± 10.6[c]	58.3 ± 12.4[a, b]

[a]: Significant difference with the junior team, [b]: Significant difference with the youth team, [c]: Significant difference with the little team, $p<0.05$

Comparing some motoric characteristics of the subjects by age categories (Table 2), there was a significant difference between the little team and other teams in all parameters ($p < 0.05$). With the increase in age, the jump performance of the subjects increased and an improvement in agility and speed performance was also determined.

Table 2. Some Motoric Characteristics of Subjects in Different Age Categories

	Junior [(a)] (n=13)	**Youth[(b)] (n=36)**	**Little [(c)] (n=31)**
Vertical jump (cm)	49.0 ± 5.9[c]	46.4 ± 6.6[c]	36.9 ± 8.6 [a, b]
Horizontal jump (cm)	211.5 ± 17.3[c]	197.1 ± 24.1[c]	182.8 ± 26.2 [a, b]
20 m sprint (sec)	3.39 ± 0.17[c]	3.37 ± 0.19[c]	3.67 ± 0.28 [a, b]
Agility (sec)	16.85 ± 0.81[c]	17.16 ± 0.56	17.81 ± 1.07 [a]

[a]: Significant difference with the junior team, [b]: Significant difference with the youth team, [c]: Significant difference with the little team, $p<0.05$

DISCUSSION and CONCLUSION

In this study, the physical and some motoric characteristics of male basketball players playing in three different categories (junior, youth and little) were compared. It has been determined that with increasing age, physical properties increase and jump, speed and agility performances rise. The increase in physical and motor performance in junior and youth team athletes was found to be statistically significant when compared with little team athletes.

Preparing athletes for competitions involves the development of physical, technical, tactical and psychological characteristics (Ziv & Lidor, 2009). It is not known which of these characteristics has the greatest impact on match performance. It is also unclear whether the results of the physical fitness tests can predict successful performance throughout the season. This does not make it less important to keep track of physical and motoric characteristics. In a study conducted to determine the relationship between seasonal basketball performance and motoric characteristics of athletes by Fort-Vanmeerhaeghe ve et al. (2016) a significant relation was determined between steal and assist performance of youth and junior basketball players and speed, agility, and jumping. In the same study, the researchers compared the physical and motoric characteristics of the youth and junior teams. They did not find any significant differences in body height and body weight, speed, agility and jump performances of the youth and junior team athletes. This finding coincides with our study.

Gencer & Asma (2017) determined the vertical jump of the average 11-year-old basketball players as 35.33 ± 4.84 cm. Savucu ve et al.(2004), in their study to which a total of 98 basketball players from the little, youth and junior categories participated, found 20 m speed performances as 3.15 ± 0.21 sec, 2.88 ± 0.11 sec, 2.75 ± 0.11 sec, respectively. Vertical jump data were determined as 36.75 ± 3.82 cm, 45.55 ± 4.03 cm, 50.83 ± 5.26 cm, respectively. With age, a decrease of 20 m sprint and an increase in vertical jump performance were observed. These findings confirm the increasing acceleration of motoric performance in the age groups of our study.

Speed and agility significantly affect efficiency and performance in basketball and players who are not fast enough cannot succeed in modern high-level basketball (Jakovljević, Karalejić, Ivanović, Štrumbelj, & Erčulj, 2017). Players with well-developed speed and agility can execute elements of modern basketball technique and tactics more efficiently (Harley, Doust, & Mills, 2008). In our study, we determined that speed and agility, which are frequently used as a necessity of basketball, develop with age and differ statistically significantly from the youth team onwards. Çetinkaya (2019), comparing the motoric features according to age categories, found significant results between minors and littles in vertical jump test in male athletes and between littles and youths in speed test ($p < .05$), whereas no significant results were found between youths and the juniors in the applied tests ($p > .05$).

Bilim, Çetinkaya, & Dayı (2016) found that girls and boys between the ages of 12-17 doing sports have their physical fitness status and body composition values significantly better than their non-sports peers. In the data presented in this study, the parameters of boys of the same age group who do sports and do not do sports were found to be lower than the parameters of the boys in our study who play basketball. This is thought to show how basketball differs in terms of physical and motoric features.

In this study, sprint, agility and jumping performance, and physical characteristics were significantly different between groups in the junior, youth and little categories. These data provide basketball coaches with information about the physical and motoric characteristics of the specified categories. Our study reveals how some of the motoric characteristics of youth basketball players proceed in a quantitative value from the little team to the junior. It is thought that these data will provide a point of reference for basketball coaches together with other data found in the literature. In addition, the study provides information about the physical and motoric characteristics of youth athletes.

Acknowledgements

This research was presented as an oral presentation at the International Sports and Wellness for All Congress held in 2018.

REFERENCES

Bayios, I. A., Bergeles, N. K., Apostolidis, N. G., Noutsos, K. S., & Koskolou, M. D. (2006). Anthropometric, body composition and somatotype differences of Greek elite female basketball, volleyball and handball players. *Journal of Sports Medicine and Physical Fitness*, *46*(2), 271–280.

Bilim, A. S., Çetinkaya, C., & Dayı, A. (2016). Investigation of physical fitness of 12-17 years old students who engage and do not engage in sports. *Journal of Sports and Performance Researches*, *7*(2), 53–60. https://doi.org/10.17155/spd.74209

Canlı, U. (2017). Basketbolculara terabant ile uygulanan kuvvet antrenmanlarının motorik beceriler ve şut performansı üzerine etkisi. *International Journal of Social Sciences and Education Research*, *3*(2), 857–869. https://doi.org/10.24289/ijsser.310970

Çetinkaya, C. (2019). *Farklı alt yapı kategorilerinde yer alan basketbolcuların bazı motorik özellikleri ile şut isabetlerinin yaş ve cinsiyete göre karşılaştırılması*. Yüksek Lisans Tezi, İstanbul Gelişim Üniversitesi, Sağlık Bilimleri Enstitüsü, Antrenörlük Eğitimi ABD, İstanbul.

Delextrat, A., & Cohen, D. (2009). Strength, power, speed, and agility of women basketball players according to playing position. *Journal of Strength & Conditioning Research*, *23*(7), 1974–1981.

Dolezajova, L., Gallova, T., & Lednicky, A. (2019). The effect of biological age in the evaluation of physical indicators and the changes in selected motoric tests of young female basketball players. *Acta Facultatis Educationis Physicae Universitatis Comenianae*, *59*(2), 118–128. https://doi.org/10.2478/afepuc-2019-0010

Drinkwater, E. J., Pyne, D. B., & Mckenna, M. J. (2008). Design and interpretation of anthropometric and fitness testing of basketball players. *Sports Medicine*, *38*(7), 565–578.

Erčulj, F., Blas, M., Čoh, M., & Bračič, M. (2009). Differences in motor abilities of various types of European young elite female basketball players. *Kinesiology*, *41*(2), 203–211.

Erčulj, F., Dežman, B., & Vučković, G. (2003). Differences between playing positions in some motor ability tests of young female basketball players. *Proceedings of 8th Annual Congress of the European College of Sport Science*. Salzburg, Austria.

Ferreira, A. E. X., & De Rose, J. (2003). Basquetebol: Técnicas e Táticas. *Uma Abordagem Didático-Pedagógica*.

Fort-Vanmeerhaeghe, A., Montalvo, A., Latinjak, A., & Unnithan, V. (2016). Physical characteristics of elite adolescent female basketball players and their relationship to match performance. *Journal of Human Kinetics*, *53*(September), 167–178. https://doi.org/10.1515/hukin-2016-0020

Gencer, Y. G., & Asma, M. B. (2017). The comparison of some motoric and technic characteristics between 12 dev adam and tofas basketball schools (Van sample). *European Journal of Physical Education and Sport Science*, *3*(1), 262–271. https://doi.org/10.5281/zenodo.1040342

Harley, R. A., Doust, J., & Mills, S. H. (2008). *Basketball. In: Winter et all (eds) Sport and Exercise Physiology Testing Guidelines Volume I: Sport Testing*. London: Routledge.

Jakovljević, S., Karalejić, M., Ivanović, J., Štrumbelj, E., & Erčulj, F. (2017). Efficiency of speed and agility dribbling of young basketball players. *Kinesiologia Slovenica*, *23*(2), 22–32.

Kamar, A. (2008). *Sporda Yetenek Beceri ve Performans Testleri*. Ankara: Nobel Yayınları.

Savaş, S., Yüksel, M. F., & Uzun, A. (2018). The effects of rapid strength and shooting training applied to professional basketball players on the shot percentage level. *Universal Journal of Educational Research*, *6*(7), 1569–1574. https://doi.org/10.13189/ujer.2018.060717

Savucu, Y., Polat, Y., Ramazanoğlu, F., Karahüseyinoğlu, M., & Bicer, Y. S. (2004). Alt yapıdaki küçük, yıldız ve genç basketbolcuların bazı fiziksel uygunluk parametrelerinin incelenmesi. *F.Ü. Sağlık*

Bilimleri Dergisi, *18*(4), 205–209.

TBF. (2019). *Basketbol Yerel Ligler Talimatı*.

Torres-Unda, J., Zarrazquin, I., Gravina, L., Zubero, J., Seco, J., Gil, S. M., … Irazusta, J. (2016). Basketball performance is related to maturity and relative age in elite adolescent players. *Journal of Strength and Conditioning Research*, *30*(5), 1325–1332.

Tsunawake, N., Tahara, Y., Moji, K., Muraki, S., Minova, K., & Yukawa, K. (2003). Body composition and physical fitness of female volleyball and basketball players of the Japan inter-high school championship teams. *Journal of Physiological Anthropology and Applied Human Science*, *22*, 195–201.

Witkowski, K., Piepiora, P., Migasiewicz, J., Maśliński, J., & Salachna, A. (2018). Physical fitness, developmental age and somatic development of youth Greco-Roman wrestlers and school youth aged 13-14 years. *Archives of Budo Science of Martial Arts and Extreme Sports*, *14*, 63–74.

Ziv, G., & Lidor, R. (2009). Physical attributes, physiological characteristics, on-court performances and nutritional strategies of female and male basketball players. *Sports Medicine*, *39*(7), 547–568. https://doi.org/10.2165/00007256-200939070-00003

Ziv, G., & Lidor, R. (2010). Vertical jump in female and male basketball players—A review of observational and experimental studies. *Journal of Science and Medicine in Sport*, *13*(3), 332–339. https://doi.org/10.1016/j.jsams.2009.02.009

The Journal of Eurasia Sport Sciences & Medicine

ISSN: 2687-265X

J Eurasia Sports Sci Med
http://dergipark.gov.tr/jessm

Volume 2, Issue 1
April 2020, 17-25

Gamze AKYOL
Kıvanç SEMİZ

Sports Science Faculty, Giresun University, Giresun, Turkey.

Corresponding author: G. Akyol

e-mail: gamz.akyoll@gmail.com

Received: 08.05.2020

Accepted: 26.06.2020

ORIGINAL RESEARCH

Experiences of Sedentary Middle Age Group Housewives Participating in Step Aerobics Course

Abstract

Doing physical activity or having an opportunity to exercise can be difficult for young and middle aged sedentary housewives, especially if there is a financial limitation, both in terms of home economics and the time. Providing a chance for benefiting the opportunities of physical activity environments, the mentioned target population can be supported for the lifelong learning and physical activity. Therefore, the purpose of the study is to investigate the process of a municipality-supported step aerobics course to sedentary housewives. This study is a qualitative study in nature in that the case study has been selected as a methodology of this study, as a specific environment has been intended to defined from a holistic view. A total of 8 participants have been selected with a homogenous sampling approach among the sedentary housewives that going to Municipality Culture and Arts Center Gym for at least 7 months in Tokat, Turkey. Two semi-structured focus group interviews have been conducted to define a group that shows similar characteristics. After the transcription period, the results have been obtained with a thematic content analysis. Four themes have been emerged as Self Confidence (1), Socialization (2), Self awareness (3), and Wellness (4) of sedentary housewives. Moving from the homes -where the sedentary housewives mostly spend their time at- to the gym, the socialization expectations have been met. Having new friends has helped them to gain good emotional wellbeing and many positive effects. Besides those good changes, the characteristics and content knowledge of the coach with the sports environment expectations are the other mentionable findings. Socially supported lifelong learning and physical activity opportunities from the official institutions are indispensible for the individuals with special needs. This study can be an example for the women who spend their whole time at homes to make them socializing, meeting their expectations to change their interests and perceptions about their environments and people around them. Within this context, it can be foreseen that submitting of similar courses to sedentary housewives by providing qualified coaches and appropriate sports environments can attribute individuals to be directed to physical activities.

Keyword: step aerobics, sedentary, experience, case study.

To cite this article; Akyol, G., & Semiz, K. (2020). Experiences of sedentary middle age group housewives participating in step aerobics course. J Eurasia Sports Sci Med, 2(1), 17-25.

INTRODUCTION

Sedentary lifestyle, increasing nowadays, has brought along some significant health problems and exceedingly has made feel the effect on the housewives that have this lifestyle the most. Physical activities cure the physiological, psychological, metabolic variables and are preventive against chronic diseases and help to sustain muscle-tendon-joint good emotional wellbeing. Notwithstanding, the effects of physical activity on health can only be in the positive way with accurate and regular exercise program, accurate daily program, adequate nutrition, individual fitness of exercise intensity and continuity period.

Regular exercise, while physically improving the body, has an important role in increasing the state of readiness psychologically against cases to be performed and creating faster solutions to problems which individuals may face with in their life. Sports branches which can easily performed and entertaining such as step aerobics, rapidly take place among people's choices who want to get rid of monotony of the daily life recently and are added to activity programs.

Step aerobics is an exercise dance which individuals can easily perform as physical fitness, its regular movements are accompanied by rhythm, entertain the person while exercising, increase muscle-tendon strength, accelerate fat burning and provide mental relaxation. Today the reason of its perception as a women sports is that it is preferred by mostly working women and housewives in our regions. The reason of this preference is that women are more appropriate to rhythm, they do not prefer high intensity exercises and they want to relieve the stress of daily life in a fun way.

There is also a decrease of houseworks which are based on physical strength of housewives or working women in communal living. Because these movements in houseworks are repetitive and uniform, energy expenditure decreases accordingly and it is difficult to maintain the body composition (Wing 1995; Arslan & Ceviz 2007: 212). The most effective method in maintaining the body composition is the adequate nutrition and performing activities by doing exercises. Activities increase the muscle volume, decrease fat content and cause the decrease of net body weight. It is also known that regular exercise has effects on loss of appetite. It increases calorie consumption and accelerates the basal metabolism. Also it increases the insulin sensitivity, HDL/LDL cholesterol ratio (Wadden 2003; Er 2015: 13).

The object of this study is to research the effect of step aerobics course on sedentary housewives.

MATERIAL AND METHOD

The study has been planned and conducted according to case study which is one of the qualitative research types. Yin (1984) explains the case study as an research method which is used in occasions studying a current event within its own reality, in which the boundaries between the phenomenon and its content are unspecified in certain lines, and in which more than a data source presents (Yıldırım and Şimşek, 2005; Büyüköztürk et al., 2016). With this study, an answer to the question of "What are the effects?" has been searched with the interpretive approach.

The sample of the study are 8 voluntary sedentary housewives who are the course attendars of Municipality of Tokat Hanımeli Culture and Arts Center with the average of age is 44. Medical approval has been obtained related that women participating in the study do

not have any harm in exercising. Women have been asked to continue their regular nutrition not to take any other special diet through the course period. Later in the course, with the aim to determine the effect of step aerobics exercises on sedentary women, they have been asked to answer 8 questions relevant to aim of the study via interview and sound recording has been done. To get more comprehensive informations, 3 women have been picked amongst them and been interviewed considering their demographic informations and lifestyles and sound recorded again. Participants in records have been encoded as A, B, C, D, E, F, G, H and the samples of the transcript of interviews have been collected under the 3 main headings.

During the step aerobics course period, participants have been exercised between 45 min and 1 hour, in %45-55 intensity, minimum 3 months long and 3 days in a week. Within this period, informations about step aerobics have been given before the exercises and questions have been answered, 5-10 min warm-up before the exercise, 5-10 min stretching after the exercise and regional work-out have been done and in the end 5 min of sleep with meditation music has been permitted.

Table 1. Exercise Program Applied on the Participants

	Month 1	**Month 2**	**Month 3**	**Later**
Exercise Period	45 min-1hour	45min-1 hour	45 min-1 hour	45 min-1 hour
Exercise Intensity	%40	%45-50	%50	%50-55
Frequency of the Course, Week/Day	3	3	3	3

Table 2. Questions to Determine the Effect of Step Aerobics Course on the Sedantary Women

1. What are your thoughts about the course before you attend the step aerobics course?
2. What are your expectations from step aerobics course, could you reach your expectations at the end of the course?
3. What are your opinions about efficiency of the instructor? Do the instructor profile in your mind before the course and the reality match up with each other?
4. What have you learned in the step aerobics course period?
5. What has this course attributed to you in terms of cognitive, physical and social aspects?
6. How has the course affected your health?
7. What are the changes in your life with the step aerobics course?
8. What do you recommend if you think the step aerobics courses to be better?

FINDINGS

As can be seen in Table 3, 3 main themes have been found according to the content analysis of study on housewives. These themes are 1- individual effects of the step aerobics course, 2- characteristics of the step aerobics instructor and 3- expectations about gym environment.

The first main theme revealing in the study findings is that effects of step aerobics course to individual. The content of this theme is completed with positively increasing and expected features in individuals. They are respectively; self confidence in individuals with the step aerobics course and increase in motivation, socialising, increase of self awareness and significant alteration in features of wellness. It is seen that with the course middle aged housewives start to love themselves and the society, their health problems decrease and feel more energetic and they gain psychological good emotional wellbeing.

Table 3. Effects of Step Aerobics Course on Sedentary Middle-Aged Women

I. Effects of step aerobics course to individuals	**Increasing self confidence and motivation (24)**	
	Socialising (36)	Expectation of socialising Feeling of belonging Change in interest and perception Extrinsic motivation Leadership and self actualization
	Self awareness (40)	Cardiovascular endurance Increase in awareness relating sports and correct implementation of exercises Importance of sports and proper nutrition
	Wellness (17)	
II. Characteristics of Step Aerobics Coach	Personality characteristics of the coach (11)	Good looking Nice attitude Entertaining and energetic coach
	Content knowledge of the coach (15)	Well-informed in the field Kickstart Interested and sympathetic coach
III. Expectation of Sports Environment	Clean and enough mirrors for everybody (8) Everchanging and renewed music (6) High ceiled, spacious (6) Gyms in which the lightnings motivate (5)	

In the conclusion of the study analysis an increase in self confidence of all participants has been observed. Self confidence means that individuals get a good point of view and being at peace with herself and the people around. [B] has responded as " I didn't like my body before and was ashamed of dressing tight dress, after I have started sports (step aerobics) my body has got shaped and now I am confident." Motivation is the desire to success the determined object. [E] has expressed herself as " I used to get up lately beforehand but now I am doing my jobs at night and come to course after my children and husband leave the house. Now I see this as my priority, the more I lost weight the more I am motivated but beforehand I was feeling embrassed." After my observations, I have come to conclusion that there is an increase of self confidence in all participants during the course period and they try to convince their friends to attend the course. The reason of my conclusion is that new participants have stated that they attend the course with advice of their friends.

Thanks to step aerobics course, expectations of the middle aged housewives participants of the study have been fulfilled, there is something different in their dailylife and they have a new environment by having some of their home time for the course. For example to that, participant [E] has reported that " I would never go outside and want to leave the bed because I had nothing to do but now with the course I try to wake up early and come to see my friends, totally I feel more energetic for my life." I also have observed that women are more energetic generally and they can communicate more easily day after day.

Women who reach the feeling of belonging have started to move more free in exercises and discovered that they are not different from others. Participant [B] has said that " I used to think they would make fun of me before I came to the gym but when I came here I thought that they were all same as me, there was not any difference between me and them." When I have compared the first times and the later, I have observed that shy eyes changed their place with confidence.

Change in interest and perception has been shown as especially sportswear and music choice in all women. Participant [C] has said that " I take a look for sportswear stores now, I was not interested in them before and now I consider the suitability of the shoe sole." In the conclusion of my observations, sweat suits and daily clothes have given their place to sports tights and sports vests in all women.

Extrinsic motivation mostly represents the women's love of their physical apperances more. Drop in fat mass with exercises, strengthening of the muscles, skin revitalization and becoming appealing of the body shape have increased the extrinsic motivation in women. Participant [B] has said that " Thanks to exercises I start to like my body more, I want to look at the mirror all the time and I fit in my clothes." According to my own observations, women have started to look more at the mirror and their expectations about apperance have increased.

Leadership and self actualization are personality developments occured as a result of learning and successfull implementations. Participant [C] has stated that " I trust in myself thanks to exercise, moreover I help my friends and I consider taking courses to be an instructor." My observation is that even it is not at the same level in all participants, sense of achievement reveals the leadership features.

Self awareness is to understand, listen, direct and represent our feelings. As an example to this, [C] " After I have figured out how to do exercises properly, I have learnt how to use my body, then I have realised that there is a change in the parts I want to develop for a long time and now I am so happy. In addition to that I have discovered my leadership feeling and I am surprised about that."

Wellness expresses to complete our daily activities in the most vigorously and energetic way. [E] has stated and become an example for the effect of step aerobics dance on wellness " I used to have such a difficulty at getting up that I had pain all over my body. Now I wake up early and do not have arthralgias, I can reach the shelves which I could not reach before, I welcome my kids positively when they come home in the evening."

Cardiovascular endurance is the increase in heart volume and the veins to expand through exercise to maintain blood flow in the most comfortable way. Participant [F] has said that " I have diabetes and heart disease, thanks to low paced exercises my drug level has decreased." Based on my observations and interviews at course period, I have come to the conclusion that various diseases in all women participated in course have been decreased or removed.

Participant [B] and [C] have made the same comment about the increase awareness to sports and the proper implementation of the exercises; "Sports has changed our point of view to life, looking good and feeling wellness are the consequences of that, also proper exercises have accelerated the process of having a dream body." I have ensured that all the participants that I coached have seen an improvement by correcting incorrectly known movements and consequently I have seen the expected result that physical reformation in all of them, understanding the importance of proper sports and sustaining of sports.

The most important condition of the importance of sports and proper nutrition, having the desired body and being healthy is to eat properly. Individuals should adjust their meals according to their daily colerie needs, consume healthy fats, and stay away from the cook – chill food and artificial sugar, besides they should be able to correctly adjust their feeding time during the day. Related to importance of sports participant [A] has stated

"Thanks to sports I wake up vigorously in the morning.", participant [D] " Because I lost weight, I can do my own jobs without help from anyone." It has been observed that individuals started to exercise more eagerly two weeks after work-out, they started to think that they were doing it properly and lost weight with proper nutrition.

The second main theme of the study is the characteristics of the step aerobics coach. Step aerobics a physical and mental exercise dance is a branch that must have knowledge of training as well as physical competence during step aerobics practice. Individuals should get out of the courses which they go to fun exercise with the less deformation as possible as they can and it should not affect their health negatively. Though the possibility is low, the trainers should take up-to-date trainings and develop themselves in terms of information and practice.

Personal characteristics of the coach, as well as his/her knowledge, is a factor which makes the lessons energetic and full and it is an important way of participants' ensuring to get a positive point of view at first glance. These characteristics are a good looking, nice attitude, funny and energetic coach; sedentary individuals have more expectations from the coach comparing to professional players regardless of the branch because they have not exercised such a sport before and they want the coach to affect them first. Step aerobics is branch in which mostly women participate and a coach with a good looking, having good communication skills and the most important completing the sessions with the participant. In other words, what is want is not that the coach shows the moves and waits but he/she exercises and entertains with the participants. Participant [G] "Days ,in which the coach is energetic, are very entertaining.", participant [E] " The clothes of the coach was appealing and now I wear similar clothes."

The content knowledge of the coach is a process starting with that the coach understands visually the need for exercise have met and notice the solutions of health problems. Otherwise, the attitude towards the coach would change and the coach may fail to fulfill the expectations. A good coach is expected to have full knowledge of the field. Updating herself/himself all the time in order to transmit the correct informations to individuals, getting traning, motivating the participants by proper training, being concerned increase the having full knowledge of the field. Participant [B] "When the coach shows me moves I understand it better and I want to do it all the time.", participant [E] " Because the coach deals with everybody equally, nobody feels more valuable or worthless." As a coach I respond my partcipants' questions in the most correctly way by keeping my trainings updated and this increases the trust of the coach. At the same time, I try a different way of motivation for everybody because of the individual differences and this makes participations to be more successful.

The third main theme of the study is the expectation of the gym. One of the most important factors affecting individuals is the ambiance of the gym. Gyms with a nice exterior and interior encourage people to exercise. Participants have answered the question relating how the step aerobics gyms should be as they should be wide, spacious, high ceiled, surrounded by the mirrors which participants can see themselves from different percepectives, in which the music changes in every lesson and lightning is enough and especially hygenic areas motivate them to exercise.

DISCUSSION

The objective of the study is to reveal physical, mental and social effects of the step aerobics dance/exercise on middle aged sedentary housewives. As a matter of fact, when we compare the developed and underdeveloped cities in our country and particularly in developed countires, it is seen that the mass of sedentary housewives' participation level of sports is low. Determining how the sedentary women participated in step aerobics group dance have changed in physical, mental and emotional ways in such environment contributes to field corcerning why women should give importance to sports activities in general and positive effects of personal gains to their life privately.

There is a meaningful difference when the period before and the ongoing time of the step aerobics course of participants has been observed. In other words with the participation of sedentary women to exercise dance, their psychological goodwill has improved, they also have started to love their bodies after weight loss thanks to exercise, they have been motivated and confident and their extrinsic motivation has increased. Richman and Shaffer (2000) state that participation in sports activities increases and positively affects body perception and satisfaction (Baştuğ, Akandere & Yıldız, 2011; 26). Lots of studies have been conducted on self confidence and psychological goodwill and the findings of these studies support my own study.

Küçük and Koç (2003) have come to the conclusion that the easiest way to psychological and socially activate people is exercise because thanks to sports people can meet and interact with other people from different thoughts and different cultures in so many environments. Within this context, the step aerobics exercise in my study on sedentary women parallels with meeting the expectation of socialisation.

In the consequence of examination of the studies conducted on exercise and the health, it has been concluded that proper exercise minimises pysical and metabolic health problems. Demir and Filiz (2004) in their study on effects of sports exercises on human organism, define the exercise as preventative the risk factors such as high blood pressure, diabetes, overweight, cholesterol and physical inactivity. It protects clear mind and psychological balance, improves the energy level. It prevents the stress, heart diseases and cancer; supports bone and muscle health. It lowers the blood pressure and helps the removal of toxins formed in body. These studies are the same as those reported by voluntary participant women in my study.

When researched the studies on sports environments, it reveals that one of the most preeminent factors to motivate the person is sports environment. People should be aware of the hygene and comfort of the sports environment. If there is not a good ventilation in the gyms, water vapor volatilises to cause discomfort for the athletes and the water vapor which is exhaled, reaches the level of disturbing the mass. This situation affects the performance in a negative way (Saçaklı, 1989; p.165; Duran, 2013; p:36). The insuffiency and improperness of the lightning, regardless of the choice of lightning type, causes one of the reasons of decrease performance in almost all areas, prescribed industrial diseases and productivity; increase the industrial accidents (Şerefoğlu, 1989; p.131; Duran, 2013; p:38). The ideal lightning at gyms is the use of the daylight. Regarless of the capacity of the gyms, artificial lightning sytems should provide direct well seeing. The daylight and the lamplight should be considering together regarding architecturally. The colour of the lights which are used in lightning of the gyms, should not damage the visual perception and colour seperations of the athletes

(Duran, 2013; p.39). Some problems such as dieseas occur in the unventilated and insanitary gyms. The overcoming the problem relies upon the designing of gyms advertently (Erkan, 1989; p.95; Duran, 2013; p:35). Informations acquired in the studies share similarity with the expectations of the participants of study.

The expectation of a coach well informed in the field in subthemes of the study is the most important headline that the participants give importance on the coach expectations. Individuals may be affected negatively as well as affected positively and this can be an excuse for sedentary life addiction which is already a problem at the moment. Individuals have right to benefit from the knowledge of the coach and trust them during exercises, and coaches should be able to transmit the knowledge to them and earn trust. According to the study of Bıyıklı (2007), it is concluded that individuals, exercising in control of expert trainers at gyms, feel safe. This study parallels with my own study.

CONCLUSION

Step aerobics is an exercise dance that individuals with physical fitness capacity can easily do, its regular moves are applied with rthym, entertains the person while exercising, increases muscle-tendon strength, accelerates fat burning and provides psychological relaxation. Getting rid of the effects of sedentary life is an easy way of keeping away from stress caused by hard life, if any, disciplining while entertaining the body.

In consequence of field observation of the study, like other cardio exercises, step aerobics exercise dance also has positive effects on middle aged sedentary housewives. Physical effects are strength of muscle-bone and tendon in individuals, having the correct posture, body values becoming admirable. Mental effects are increasing self-confidence and motivation, gaining the sense of belonging to groups, leadership and proving self to people and providing extrinsic motivation. Social effects are meeting the expectation of socialising of housewives, change in interest and perception developing with socialising, increase in the awareness towards environment and the people, entertain and getting activity.

SUGGESTIONS

Regular exercising in terms of the health is a need for every age and investments should be made in sports considering that a certain part of the society does not have the budget for this and this should be open for public. Women participated in the study could reach the gym in which they could not go because of both financial and spouse pressure, thanks to facilities of the municipality that they would use free of charge where they are located, and they could make a difference in their lives.

One the most common problems in exercise dances is the coach and behaviour. The coach expectation of sedentary women that have never conducted such an activity and do not participating in this type study is a person well informed in the field, good looking and cheerful, kick-start, interested and entertaining with group during exercises and energetic. Within this context, the coaches should be controlled regularly, work legally (certificated) and be evaluated by feedbacks.

Indoor or outdoor sports halls, step boards and music are necessary for the group to be comfortable at the same time for step aerobics exercise dance. Suggestions for the exercise area in the study; the gyms should be clean and covered with enough mirrors for everybody, the music should be different in each lesson and various music styles should be used in the

course, the halls should be wide, spacious and the lightning should motivate the individuals to prepare for dance.

REFERENCES

Arslan, C. & Ceviz, D. (2007). Ev hanımı ve çalışan kadınların obezite prevelansı ve sağlıklı yaşam biçimi davranışlarının değerlendirilmesi. *Fırat Üniversitesi Sağlık Bilimleri Dersigi,5,* 212.

Baştuğ, G. ve Akandere, M. Ve Yıldız, H. (2011). Sedanter genç bayanlarda aerobik egzersizin vücut kompozisyonu ve kendini fiziksel tanımlama değerlerine etkisi. *Spor ve Performans Araştırma Dergisi, 2, 2,* 26.

Bıyıklı, T. (2007). Vücut İmgesinin ve Özel Spor Salonlarının Egzersize Başlama ve Devam Etme Motivasyonu Üzerine Etkisi, Yüksek Lisans Tezi, Gazi Üniversitesi, s. 43-44, Ankara.

Büyüköztürk, Ş., Çakmak, E., Akgün, Ö,E., Karadeniz, Ş. ve Demirel, F. (2016). *Bilimsel araştırma yöntemleri yirmi ikinci baskı.* Ankara: Pegem Akademi.

Demir, M. ve Filiz, K. (2004). Spor egzersizlerinin insan metabolizması üzerine etkileri. *Gazi Üniversitesi Kırşehir Eğitim Fakültesi Dergisi, 5, 2,* 113.

Duran, A. (2013). *Vücut geliştirme ve fitness salonuna giden bireylerin beklentileri.* Yüksek Lisans Tezi. Uzak Doğu Üniversitesi, Lefkoşa.

Er, Y. (2015). Aerobik Antrenmanların Beden Algısı Üzerine Etkisi. Selçuk Üniversitesi Sağlık Bilimleri Enstitüsü Antrenörlük Eğitimi Anabilimdalı, Konya.

Erkan, N. (1989). Spor Tesislerinin Planlanmasında Kullanıcı Gereksinimlerinin Gözetilmesi Hijyenik ve Ergonomik Yaklaşımlar**,** Türkiye'de Spor Tesislerinde Genel Planlama Sorunları Sempozyumu, s.95, Yıldız Üniversitesi, İstanbul.

Küçük, V. ve Koç, H. (2003). Psiko-sosyal gelişim sürecinde insan ve spor ilişkisi. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, 9,* 10.

Özevin Tokinan, B. ve Bilen, S. (2011). Yaratıcı dans etkinliklerinin motivasyon, özgüven, özyeterlilik ve dans performansı üzerine etkileri. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 40,* 372.

Richmen, E. & Shaffer, D. (2000). If you let me play sports: How might sport participation ınfluence the self-esteem of adolescent females? *Psychology of women Quartery, 24,* 189-199.

Saçaklı, H. (1989). Spor Tesislerinde Havalandırma ve Isıtmanın Performansa Olan Etkileri, Türkiye'de Spor Tesislerinde Güncel Planlama Sorunları Sempozyumu, s.165,162, Yıldız Üniversitesi, İstanbul.

Şerefoğlu, M. (1989). Kapalı Spor Salonlarında Aydınlatma ve Mimmari Biçimlenişe Etkisi, Türkiye'de Spor Tesislerinde Güncel Planlama Sorunları Senpozyumu, s.131, Yıldız Üniversitesi, İstanbul.

Yin, R. (1984). Cesa study reserch: Desing and methods. Beverly Hills, CA: Sage Puplishing.

Yıldırım, A. ve Şimşek, H. (2005). *Sosyal bilimlerde nitel araştırma yöntemleri (Güncelleştirilmiş ve geliştirilmiş beşinci baskı).* Ankara: Seçkin Yayıncılık.

Wadden, T, A. ve Osei, S. (2003). Obezite Tedavisi, Obezite tedavi el kitabı, s. 229-248.

Wing, R, R. (1995). Changing diet and exercise behaviours in individuals at risk for weight gain. *Obes Res Suppl 2*, 277-282.