

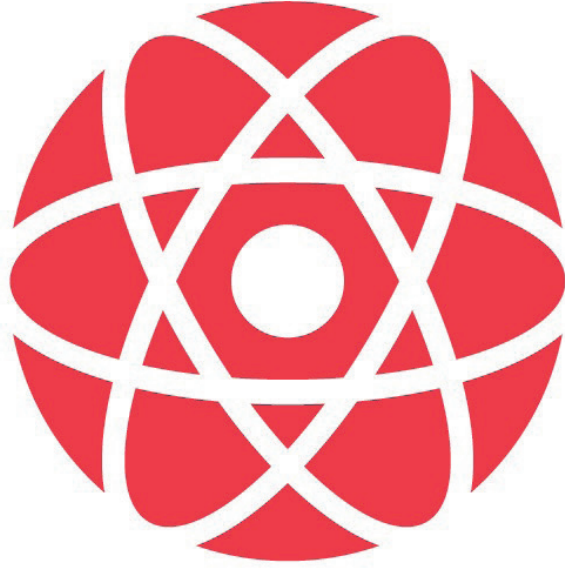
INTERNATIONAL REFEREED ACADEMIC JOURNAL OF SPORTS

PRINT ISSN: 2146-8508 - ONLINE ISSN: 2147-1711

ISSUE: 21 YEAR: 2016



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Çetin YAMAN
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Dear readers,

There are a total of 11 articles in this volume of our journal. We have completed the last volume of the year 2016. Our journal celebrates its fifth year with this volume. Our journal is considered to be a field indexed journal by the Inter-university Council and continues its publication life as a 10-point journal. The next volume of our journal being published four times a year will be published in March 2017. We deeply thank our editorial board, science and advisory boards, executive board and our referees who have always stood by our side with their valuable experience and support in bringing our journal to this point. We also want to thank our distinguished authors who support us with their qualified studies. We would like to thank the volume referees, field editors and other staff of the journal for their contribution and support. Dear readers, our journal publishes various studies in each volume. All the papers of this journal including previously published ones are considerably valuable and followed and referred by many people. We will continue to serve as a bridge between all scientists particularly you- dear readers - and our journal after that. From now on, our journal will sustain its publication life under the supervision and ownership of Istanbul Association of Science and Academicians for 10 years as per the agreement made in December. So, our journal has a corporate identity and an affiliated institution. This development will help our journal and the articles published in our journal be more functional. We express our gratitude towards the administrators of the association for their support and contribution in advance. We hope to meet you in the next volume and wish you a joyful and happy new year with full of health and love. Best regards.

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A COMPARISON OF MATCH ANALYSIS RESULTS OF 2015-2016 SPOR
TOTO SUPER LEAGUE TEAMS ¹2015-2016 SEZONU SPOR TOTO SÜPER LİG TAKIMLARININ MAÇ
ANALİZİ SONUÇLARININ KARŞILAŞTIRILMASI*Ali Onur CERRAH¹, Yılmaz YÜKSEL², Ramazan TAŞÇIOĞLU³**¹⁻²⁻³ Anadolu University, Faculty of Sport Sciences, Eskişehir / Turkey*

Öz: Bu araştırma 2015-2016 Spor Toto Süper Lig’de yer alan takımların bölgelere göre asist öncesi pas, asist ve gol skorları verilerini gol amaçlı oyun anlayışlarını değerlendirmek amacıyla yapılmıştır. Bu çalışmada kullanılan veriler, 2015-2016 Spor Toto Süper Lig’de yer alan takımların (18 takım) maç (306 maç) özetlerinin LİG TV web sitesi üzerinden iki araştırmacı tarafından izlenmesi ile elde edilmiştir. Verilerin istatistiksel analizlerinde SPSS 22.0 programı kullanılmıştır. Yapılan Shapiro-Wilk testine göre normal dağılım göstermeyen veriler non-parametrik testlerden Kruskal Wallis Testi ve Kruskal Wallis çoklu karşılaştırma testi ile analiz edilmiştir. Bu sonuçlara göre, takımların müsabakalar esnasında yaptıkları diğer alanlar bölgesinden asist öncesi paslarda, gol bölgesinden asistlerde, serbest vuruştan, karambolden, orta yapılan bölgeden, gol bölgesinden ve gol vuruş alanı 1 bölgesinden atılan gollerde takım grupları açısından etki değeri çok büyük anlamlı farklar bulunmuştur. Sonuç olarak, özellikle ülkemizdeki takımların en büyük sorunlarından biri üçüncü bölge hücum çeşitliliği olduğu düşünüldüğünde, araştırma bulguları antrenör ve sporculara yol gösterir niteliktedir. Üst sıralardaki takımların ceza sahası içerisinde yer alan altın bölgeyi alt sıralardaki takımlara göre daha etkin kullanmaları, bu oyun anlayışının antrenör ve sporcular açısından başarılı sonuçlar sağlayabileceği çıkarımı yapılabilir.

Anahtar Kelimeler: Futbol, Maç Analizi, Altın Bölge, Hücum Futbolu, Gol Bölgesi

Abstract: This study aimed to investigate pre-assist passes, assists and goal scores from different zones by Sport Toto Super League teams in 2015-2016 to reflect their football understanding aiming to score goals. All of the matches (totally 306 matches) of the 2015-2016 Spor Toto Super League were analyzed on LİG TV website by the two scientists. The SPSS 22.0 was used for statistical analyses. According to normality test (Shapiro-Wilk), non-parametric Kruskal Wallis Test was used in order to identify differences. According to the results, the pre-assist passes made by the teams in other zones during the games, the assists made in goal zones, the goals scored from free kicks, the goals scored from carom positions, the goals made through the crossed balls, the goals scored from the goal zones, the goals scored from the goal shoot zone 1 were found to significantly difference with very high effect size for team groups. In brief, when the offense diversity in the 3rd zone which is one of the biggest problems of the teams in our country is considered, the research findings are suggested to be a guiding light for trainers and players. The fact that the teams at top ranks are better at using the gold zone within the penalty area compared to those at the bottom ranks can be used to suggest that this play style can offer successful outcomes for trainers and players.

Key Words: Soccer, Match Analysis, Gold Zone, Attacking Football, Goal Zone

Doi: 10.17363/SSTB.20162124004

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: C19-E44-G15-G30-G39-L25-L83-M20 ID:301 K:388

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

As in all branches of sports, one of the factors affecting footballers' performances and successes is their physical capacities (Rankovic et. al, 2010). Because football is a sport with low density overloads (Drust, 2009:24) as well as high aerobic and anaerobic effort overloads (Orendurff et. al., 2010: 2683; Aşçıet.al, 2009: 48; Alghannam, 2012: 65). Another factor affecting footballers' performances and successes in matches is their technical and tactical capacities which are considered to be a major determinant in footballers' game performances (Carling et.al, 2005: 18).

Evaluation of players' technical, tactical and physical performances through qualitative and quantitative methods is very important for players to reach their technical, tactical and motivational fitting levels (Uğraş et. al, 2002: 243). Team performances can also be changed through match analysis methods which also benefit from inferential statistics as well as descriptive statistics (Cengiz and Kılınç, 2002: 351; Işık and Genç, 2007: 102). In football, match analysis methods are employed to investigate parameters regarding players' technical, tactical and physical capacities (Sarmiento et. al, 2014: 1). Match analysis is about objective recording of the information regarding the matches and obtaining accurate statistical and numerical

values to find out performance parameters of the players in games. Match analysis which is mostly conducted with the use of voiced observation, manual or computerized techniques are considered to be significant factors affecting performances and successes of players in football (Müniroğlu, 2009: 17). In addition, it is also used by trainers in obtaining objective data and in guiding teams under the collected data (İmamoğlu et. al. 2015: 161), such as the technical performance parameters e.g. on target shoot and pass control (Moura et.al 2014: 1881).

In some of the studies conducted with the use of match analysis methods in the literature, the number of shoots, the rate of on target shoots and ball control rates (Castellano et. al. 2012: 141), set-piece goals (Cerrah and Gürol, 2011: 79) and the goals set in world cups and leagues (De Branda and Lopez, 2012: 121) were investigated. Similarly, according to the findings in the literature, it is commonly seen that aiming to attack affects match results (Winter and Pfeiffer, 2016: 486) and shoot on goals are largely achieved within penalty area (İmamoğlu et. al 2007: 157, Sönmeyenmakas 2008 46).

Whereas there are many studies in the literature investigating penalty area and the goals set, the number of studies investigating the organization of the set goals which is a signal of tactical understanding in which



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assists and the pre-assist zones is limited in the literature. This study which was conducted within this scope aimed to investigate the goals set from carom or free kicks, penalty as well as corner kicks, pre-assist passes, assists and goal scores from different zone by Sport Toto Super League teams in 2015-2016 to reflect their football understanding aiming to score goal.

METHOD

Research Design

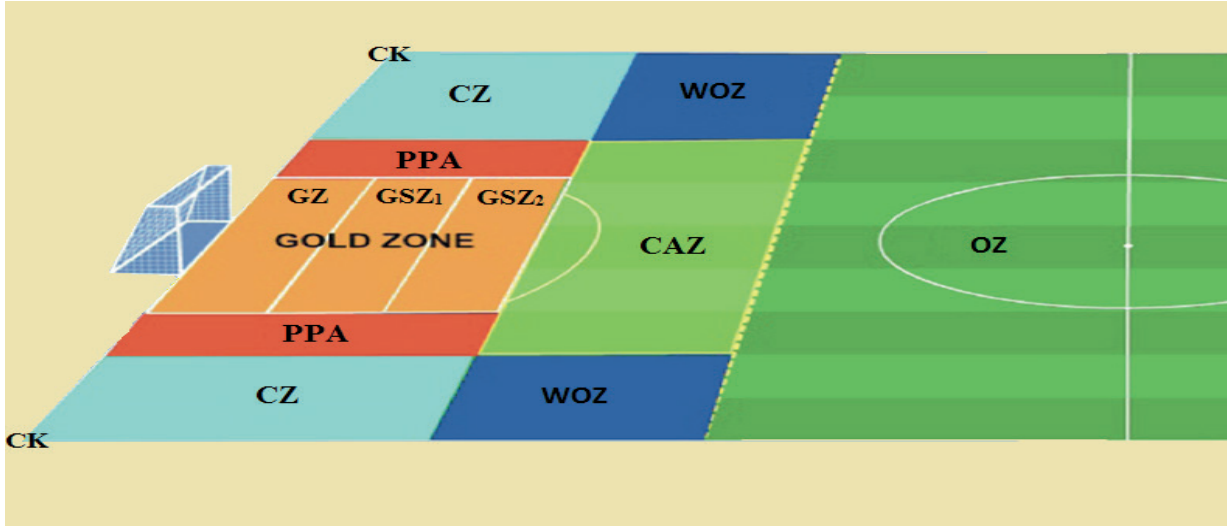
This study used a qualitative content analysis method which is a type of content analysis out of the qualitative research techniques commonly used to measure the frequency and diversity of the messages within the data regarding the written or electronic communication with a positivist perspective

(Yıldırım and Şimşek, 2003: 162; Güler et. al, 2015: 337).

Data Collection

The data used in this study was collected by the two researchers watching the match highlights of Super League teams (306 matches) in 2015-2016 football season (18 teams) on the web site of LIG TV Corner kicks, pre-assist passes, assists and goal scores as well as the goals scored from carom and free kicks in the viewed match highlights were recorded on Microsoft Excel 2013 under pre-determined headings. The recordings of three parameters (pre-assist pass, assist and goal) were redescribed by the researchers adapting from the studies of John Bilton on match analysis (Bilton and Usher, 2014) (Figure 1).

Figure 1. Game Zones



GOZ: Gold Zone, CK: Corner Kick, WOZ: Wide Offensive Zone, OZ: Other Zones, CAZ: Central Attack Zones, CZ: Crossing Zone, PPA: Short Pass Made Into Penalty Area, GZ: Goal Zone, GSZ₁: Goal Shoot Zone1, GSZ₂: Goal Shoot Zone2, CRM: Carom, PEN: Penalty, FK: Free Kicks

To increase the reliability of the data obtained from the content analysis, it is suggested to meet the criteria of stability, reproductively and accuracy. Therefore, to increase the reliability of the data obtained with this study, the collected data were classified under pre-

determined and standardized headings by the researchers. To increase the validity of the collected data, the results and fittings between the categories were examined (Güler et. al., 2015: 362-363). To do that, the researchers looked for a consensus on the contradictory issues.



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Figure 2. Team Groups Depending on the 34th Week of 2015-2016 Spor Toto Super League

1.Grup	2.Grup	3.Grup
1.Beşiktaş	7.Kasımpaşa	13.Çaykur Rizespor
2.Fenerbahçe	8.Akhisar Belediye	14.Gaziantepspor
3.Konyaspor	9.Antalyaspor	15.Kayserispor
4.Başakşehir	10.Gençlerbirliği	16.Sivasspor
5.Osmanlıspor	11.Bursaspor	17.Eskişehirspor
6.Galatasaray	12.Trabzonspor	18.Mersin İdman Yurdu

The teams which were listed in this study based on their total scores at 34th week of 2015-2016 Spor Toto Super League were grouped into three categories by the researchers as the first group aiming to compete for international tournaments (UEFA Champions League and UEFA Europa League), the second group already ensuring to remain in the league without any aim for any international tournaments and the third group which fight in the drop zone to stay in the league in the last weeks of the season (Figure 2).

Statistical Analysis

SPSS 22.0 programme was used in the analysis of the collected data in the study. According to the Shapiro-Wilk test for checking normality, Kruskal Wallis (KW) and KW multiple comparison tests which are some of the non-parametric tests were used for non-normally distributed data.



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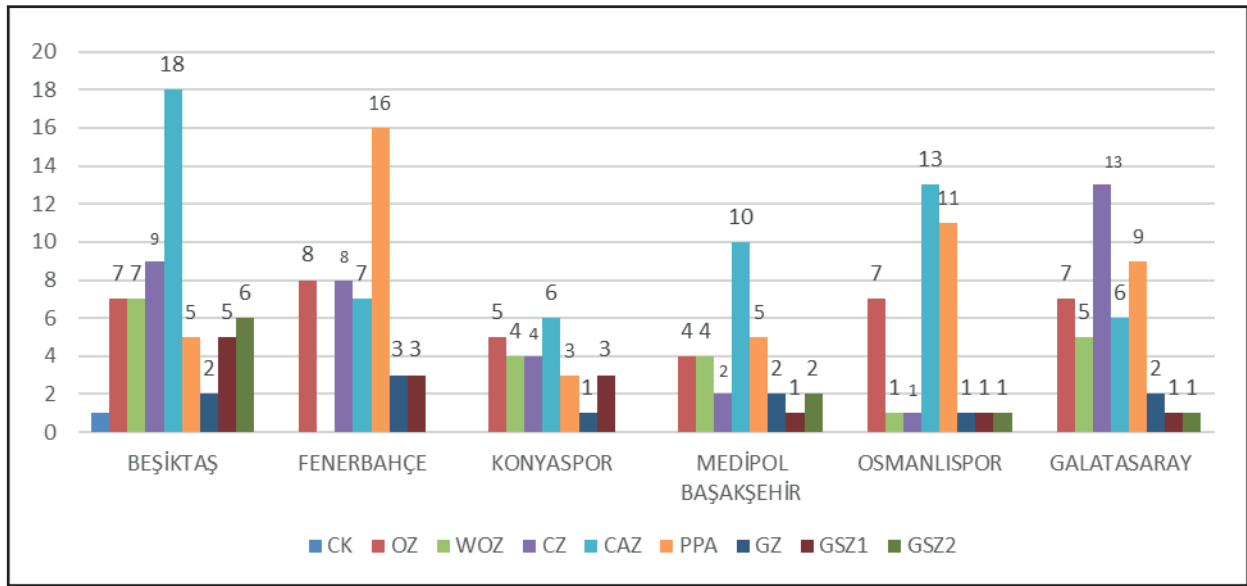
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FINDINGS

Figure 3. Assist Distribution of the 1st Group Teams Depending on Zones



According to the data presented in Figure 3, the team winning the championship in the 1. Group teams (Beşiktaş) was found to make the assists (18 assists) mostly from CAZ in the games. In addition, the team in the second

rank at the end of the season (Fenerbahçe) was found to make the assists mostly from PPA (16 assists). The teams competing in the 1st group were found to make assists mostly in CAZ (60 assists) and PPA (49 assists).



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GEL CODE: C19-E44-G15-G30-G39-L25-L83-M20 ID:301 K:388

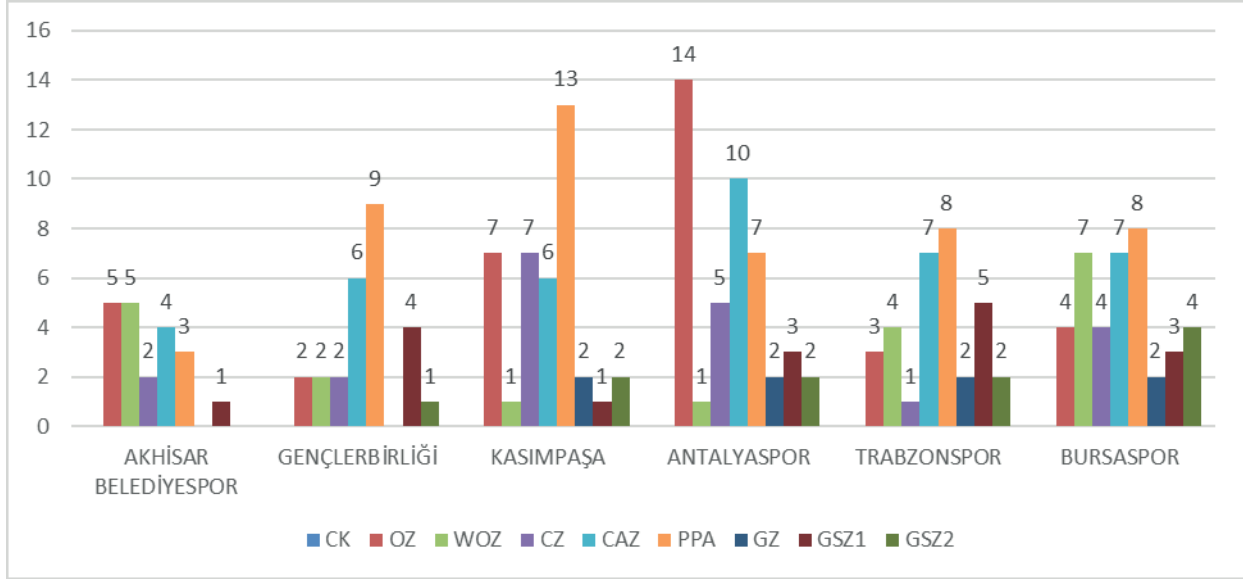
ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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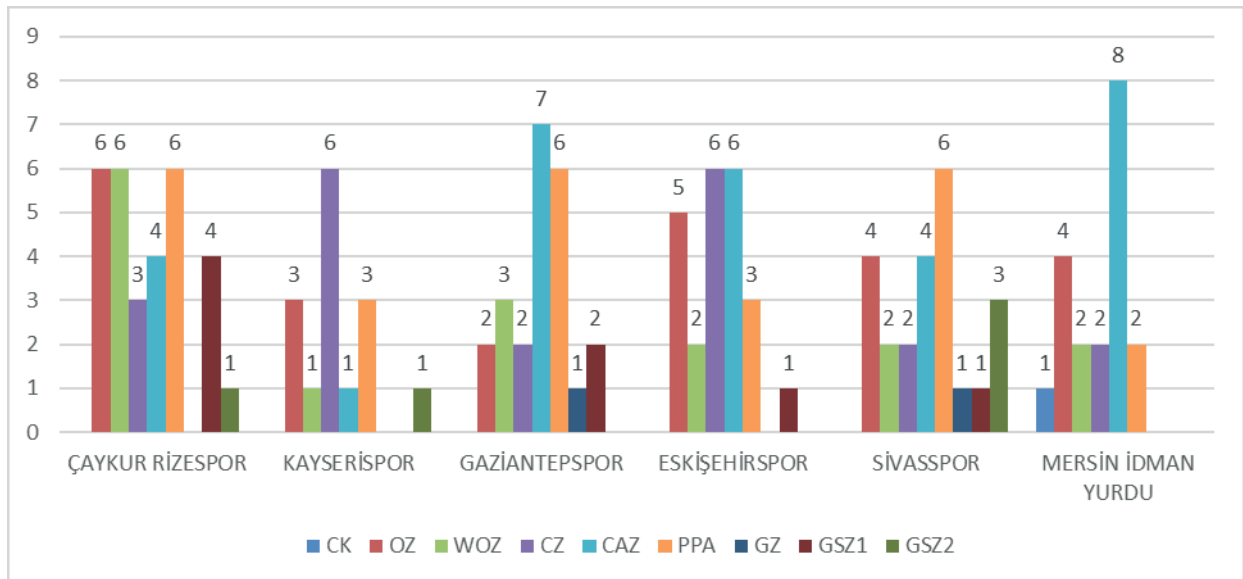
Figure 4. Assist Distribution of 2nd Group Teams Depending on Zones



According to the data in Figure 4, the zones where the teams in the 2nd group make the most assists when their matches between

each other were considered, were found to be in PPA (48 assists) and CAZ (40 assists).

Figure 5. Assist Distribution of 3rd Group Teams Depending on Zones





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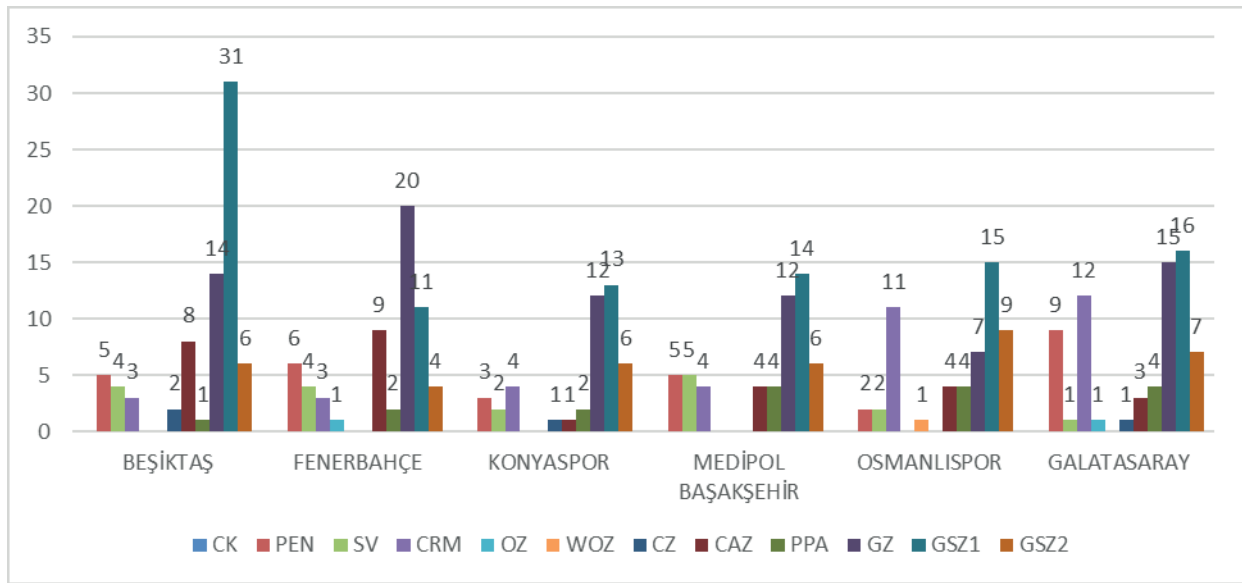
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According to the data in Figure 5, the assists made by the teams in the 3rd group were found to be mostly in CAZ (30 assists). In addition,

the number of assists made in CAZ (30 assists), PPA (26 assists) and OZ (24 assists) were found to be similar to one another.

Figure 6. Goal Distribution of the 1st Group Teams Depending on Zones.



According to the data in Figure 6, the team winning the championship of the league in the 1st group (Beşiktaş) was found to score goals in GSZ₁ most (31 goals), the team in the second rank at the end of the season

(Fenerbahçe) was found to score goal from GZ most (20 goals). The zones where the teams in the 1st group scored most were found to be GSZ₁ (100 goals) and GZ (80 goals).



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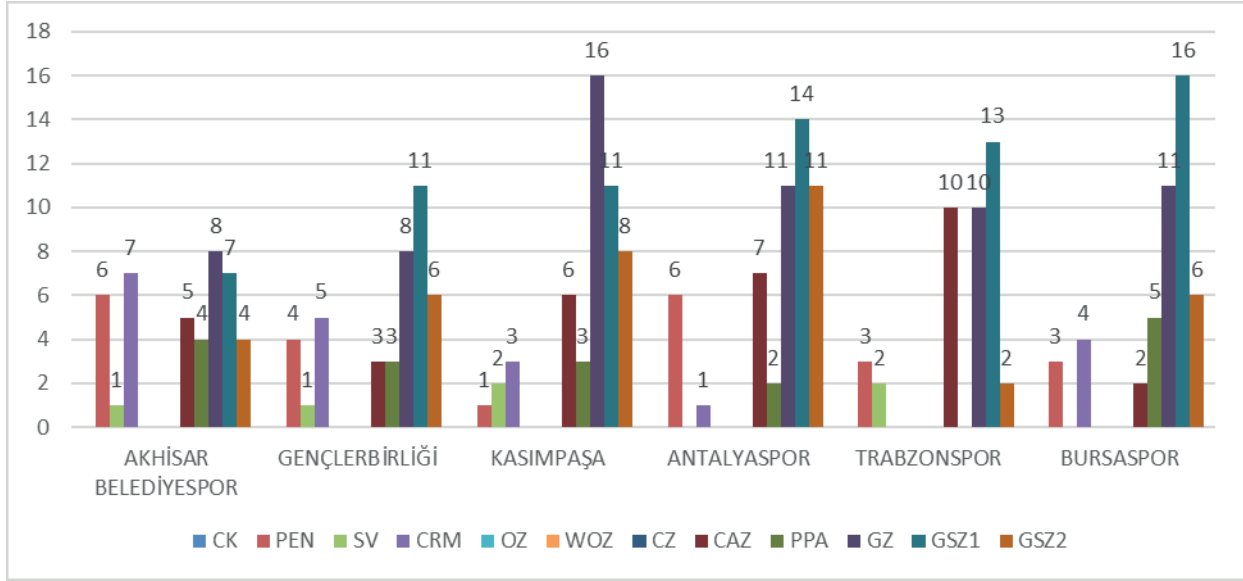
ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

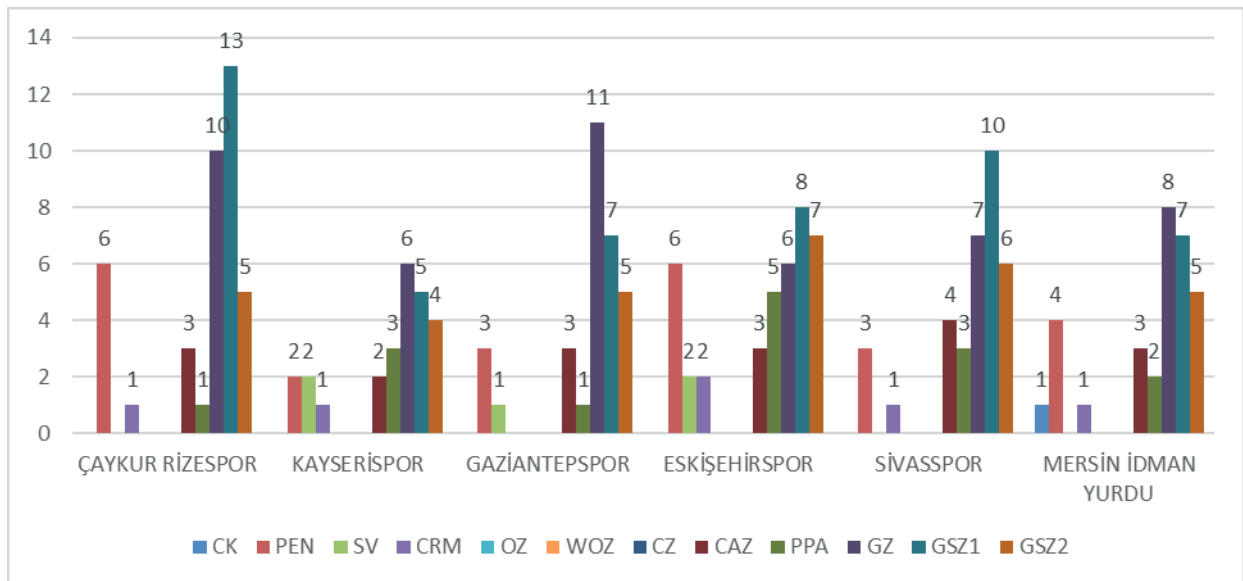
Figure 7. Goal Distribution of the 2nd Group Teams Depending on Zones.



According to the data in Figure 7, the goals scored by the teams in the 2nd group were

found to be, respectively, from GSZ₁ (72 goals) and GZ (64 goals).

Figure 8. Goal Distribution of the 3rd Group Teams Depending on Zones.





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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

According to the data in Figure 8, the goals scored by the teams in the 3rd group were found to be from GSZ₁ (50 goals) and GZ (48 goals). In addition, the goals scored by the

3 teams in the 3rd group and being dropped from the league were found to be from GZ (48 goals), GSZ₁ (50 goals) and GSZ₂ (32 goals).

Table 1. Comparison Pre-Assist Passes, Assists and Goals of the Team Groups Depending on the Zones

Team Groups	Zone	n	Min	Max	Median	MeanRank	SD	Percentage		η^2	KW	Multiple Comparison
								25	75			
1. Group	Pre-Assist Passes in OZ	6	6	17	7,5	11.92	4.21	5.75	10.25	.48 [#]	10.39**	1>3** 2>3**
2. Group		6	6	19	9	12.75						
3. Group		6	3	6	5	3.83						
1. Group	Assists in GZ	6	1	3	2	12.83	.98	.00	2.00	.73 [#]	7.26*	1>3**
2. Group		6	0	2	2	10.50						
3. Group		6	0	1	0	5.17						
1. Group	Free Kick Goals	6	1	5	3	13.92	1.50	.00	2.00	.83 [#]	6.67*	1>3* 1>2*
2. Group		6	0	2	1	7.67						
3. Group		6	0	2	.50	6.92						
1. Group	Carom Goals	6	3	12	4	13.50	3.45	1.00	4.25	.65 [#]	8.10*	1>3**
2. Group		6	0	7	3.5	10.08						
3. Group		6	0	2	1	4.92						
1. Group	Goals in PPA	6	0	2	.50	12.50	.54	.00	.00	.53 [#]	6.75*	1>3* 1>2*
2. Group		6	0	0	.00	8.00						
3. Group		6	0	0	.00	8.00						
1. Group	Goal in GZ	6	7	20	13	13.25	3.77	7.75	12.50	.54 [#]	6.73*	1>3**
2. Group		6	8	16	10.50	9.92						
3. Group		6	6	11	7.50	5.33						
1. Group	Goal in GSZ ₁	6	11	31	14.50	13.67	5.72	7.75	14.25	.60 [#]	8.41*	1>3**
2. Group		6	7	16	12	10.00						
3. Group		6	5	13	7.50	4.83						

**p<.01 *p<.05



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Respectively, $\eta^2=0.01$ Small, $\eta^2=0.06$ Middle, $\eta^2=0.14$ High, $\eta^2=0.20$ Very High Effect Size

In Table 1, the distribution of pre-assist passes, assists and goals of teams depending on zones and the goals scored from free kicks and carom was given depending on Kruskal Wallis and Multiple Comparison test. According to the results, the pre-assist passes made by the teams in other zones during the games (KW= 10.39; $p<.01$; $\eta^2=.48$), the assists made in goal zones (KW=7.26; $p<.05$; $\eta^2=.73$), the goals scored from free kicks (KW=6.67; $p<.05$; $\eta^2=.83$), the goals scored from carom positions (KW=8.10; $p<.05$; $\eta^2=.65$), the goals made through the crossed balls (KW=6.75; $p<.05$; $\eta^2=.53$), the goals scored from the goal zones (KW=6.73; $p<.05$; $\eta^2=.54$), the goals scored from the goal shoot zone 1 (KW=8.41; $p<.05$; $\eta^2=.60$) were found to significantly difference with very high effect size for team groups.

According to the multiple comparison of the pre-assist passes made from the other zones, the 1st group of teams which consists of top six teams in the league and the 3rd group which consists of last 6 teams and the 2nd group which consists of the average six teams in mid-position were found to differ significantly for the benefit of the 1st group and 2nd group ($p<.01$). The pre-assist passes made in other zones when team groups were

considered were found to be insignificantly different ($p>.05$). According to the multiple comparison tests of the assists made from the goal zone, the 1st and the 3rd group of teams were found to significantly differ for the benefit of the 1st group ($p<.01$). The assists made in the assists zones when team groups were considered did not suggest any significant difference ($p>.05$). According to the multiple comparison test results of the goals scored from free kicks, the 1st group and the 2nd and the 3rd group were found to be significantly different for the benefit of the 1st group ($p<.05$). According to the multiple comparison test of the goals scored from carom, the 1st group and the 3rd group were found to be significantly different for the benefit of the 1st group ($p<.01$). According to the multiple comparison test of the goals scored through the crossed balls, the 1st group and the 2nd group and the 3rd group were found to significantly differ for the benefit of the 1st group ($p<.05$). According to the multiple comparison test of the goals scored from the goal zone, the 1st group and the 3rd group were found to significantly differ for the benefit of the 1st group ($p<.01$). According to the multiple comparison test of the goal shoot zone 1, the 1st group and the 3rd group were found to significantly differ for the benefit of the 1st group ($p<.01$). There has been no significant difference when other goal shoot



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zone were considered for the team groups ($p>.05$).

RESULTS and DISCUSSION

The findings of this study suggest that the teams in the league competing for winning the championship or joining the European cups (1st group) and the teams in mid-positions of the league (2nd group) were found to be better scoring teams from pre-assists passes, assists in goal zone, free kicks, carom and the zones where goal passes are crossed and goal shoot zone 1 compared to the teams competing to stay in the league (3rd group). The reason for that may be the teams with higher budgets can transfer more talented players and that they get better scores compared to those teams which lack of such budget.

When we examine the details of the study, the teams in the 1st group were found to be better at scoring goals from the carom positions within the penalty area, free kick goals, goal zone goals and assists in goal zones compared to the teams in the 3rd group. The reason for this may be the teams in the 1st group could organize better offenses into the opponent teams' penalty zones more effectively compared to the teams in the 3rd group. The findings of the studies in the relevant literature suggest that offensive based playing can significantly affect the match results (Winter and Pfeiffer,

2016: 486). They also come up with findings suggesting that goal kicks significantly are done within the penalty areas (İmamoğlu, at. al. 2007: 157). Another study carried out to investigate the goals of the teams competing in UEFA Champions League in 2004-2005, 2005-2006 and 2006-2007 seasons depending on the zones of goal occurrence suggest that great majority of the goals score in three seasons (respectively, 76.4%, 77,5% and 77%) were scored within the penalty areas (Sönmeymenmakas, 2008: 46). These findings support this study results.

The teams in the 1st group were found to be more effective in the goals scored from free kicks, which are very important in goal scoring in set games (Carling, 2005; 109) and the goals scored from the balls crossed out of the penalty areas compared to the teams in the 2nd and 3rd group. The reason for that may be the players responsible for free kicks are more capable with regards to technical and tactical skills compared to those of the 2nd and 3rd group teams. The shoots on target which were investigated in many studies and which are suggested to be the factors affecting the winning rates in football (Mouraet. Al., 2014: 1886; Göral, 2015: 1107; Lago-Penas et. al., 2010: 288) can be used in explaining for the fact that the teams in the 1st group had better match scores compared to the teams in the 2nd group in this study.



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The basic reason for this study to divide the teams in the league into groups for evaluation was to find out how the teams in top ranks differed from those in mid-ranks and lower ranks. That is why; no team-based evaluation was conducted in this study. However, it was found based on the descriptive statistics that the team which winning the championship at the end of the season (Beşiktaş) was better at using the central attack zone compared to the other teams in the league. The team which was at the second rank of the league at the end of the season (Fenerbahçe) was found to be better at short passes into penalty area compared to the other teams including the champion team, Beşiktaş. These findings cannot be suggested as the only factor affecting the success of the top rank teams in the league, but they can be suggested to play important roles in increasing them up to the top ranks in the league.

Further researches need to be conducted in the leagues of various countries to test to what extend these findings show consistency. The evaluation of the pre-assist passes, assist and goal values which were investigated in this study based on their occurrence described by the researchers is the basic limitation of this study. The identification of the rates regarding the offenses ended up with goals and goal attempts for efficiency calculations can be suggested for further studies in the future.

In brief, when the offense diversity in the 3rd zone which is one of the biggest problems of the teams in our country is considered, the research findings are suggested to be a guiding light for trainers and players. The fact that the teams at top ranks are better at using the gold zone within the penalty area compared to those at the bottom ranks can be used to suggest that this play style can offer successful outcomes for trainers and players.

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**DETERMINING THE RELATIONSHIP BETWEEN SELF-EFFICACY,
PERCEPTION OF SUCCESS AND MOTIVATION IN JUNIOR NATIONAL
WRESTLING TEAM ATHLETES ¹****GÜREŞ YILDIZ MİLLİ TAKIM SPORCULARIN ÖZ-YETERLİK, BAŞARI
ALGISI VE GÜDÜLENME DÜZEYLERİNİN BELİRLENMESİ***Ayşe TÜRKSOY¹, Burcu GÜVENDİ¹, Mustafa ŞAHİN², Murat KORKMAZ³*¹ *Istanbul University, Faculty of Sport Sciences, Sporda Psycho-social Fields A.D. Istanbul / Turkey*² *Karadeniz Technical University, Fatih Education Faculty, Guidance and Psychological Counseling A.D. Trabzon / Turkey*³ *Güven Group Inc. Board Member, Istanbul / Turkey*

Öz: Çalışmanın amacı güreş yıldız milli takım sporcularının öz-yeterlik, başarı algısı ve güdülenme düzeylerinin bazı bağımsız değişkenlere göre belirlenmesi ve aralarındaki ilişkinin tespit edilmesidir. Araştırmanın evrenini; yıldızlar kategorisindeki milli sporcular oluştururken örneklemini ise kamplarda yer alan ve çalışmaya katılan yaş ortalamaları 16.21 ± 0.73 olan 15 kız, 40 erkek toplam 55 sporcu oluşturmaktadır. Veri toplama aracı olarak; 'Başarı Algısı Envanterinin Çocuk Versiyonu', 'Güdülenme Ölçeği' ve 'Öz-yeterlik Ölçeği' kullanılmıştır. Verilerin değerlendirilmesinde normal dağılım koşulları yerine gelmediği için istatistiksel yöntem olarak; betimleyici istatistikler, Spearman Korelasyon Analizi, non-parametrik testlerden Kruskal Wallis ve Mann-Whitney U testleri kullanılmıştır. Yapılan analizler sonucunda güreşçilerin öz-yeterlikleri orta düzeyde, görev ve ego yönelimleri yüksek düzeyde bulunmuştur. Dışsal ve içsel güdülenme puanları yüksek, güdülenmeme puanları ise orta düzeydedir. Korelasyon analizi sonucunda, görev yönelimi ile içsel güdülenme arasında orta düzeyde pozitif yönde ve görev yönelimi ile dışsal güdülenme arasında ise düşük düzeyde pozitif yönde anlamlı ilişki görülmüştür. Ego yönelimi ile içsel güdülenme arasında orta düzeyde pozitif yönde anlamlı ilişki tespit edilmiştir. Öz-yeterlik ile içsel güdülenme ve dışsal güdülenme arasında orta düzeyde pozitif yönde anlamlı ilişki olduğu belirlenmiştir. İçsel güdülenme alt boyutu olan 'uyaran yaşamak için içsel güdülenme' boyutunda katılımcıların cinsiyetleri açısından anlamlı bir farkın olduğu görülmüştür ($Z=-2.460$, $p<0.05$). Katılımcıların cinsiyete ($Z=-2.164$, $p<0.05$) ve spora başlama yerine göre ($Z=-2.171$, $p<0.05$) görev yönelimlerinde anlamlı bir farkın olduğu belirlenmiştir. Görev ve ego yönelimi, öz yeterlik ve güdülenme düzeylerinde yaş, spor yılı ve millilik sayısına göre anlamlı bir fark yoktur. Cinsiyet açısından kızların içsel güdülenme ve görev yönelimli olma düzeyleri erkeklerden daha yüksek olduğu ayrıca güreşe spor kulüplerinde başlayanların, güreş eğitim merkezinde başlayanlara göre görev yönelimli olma düzeylerinin daha yüksek olduğu görülmüştür.

Anahtar Kelimeler: Güreş, Öz Yeterlik, Güdülenme, Başarı Algısı

Abstract: The purpose of this study was to determine the level of self-efficacy, perception of success and motivation of junior national wrestling team athletes according to some independent variables, and to investigate the relationship between them. A total of 55 athletes composed of 15 girls and 40 boys (age= 16.21 ± 0.73) taking part in the national camps participated in the study. 'The Children's Version of the Perception of Success Questionnaire', 'Motivation Scale' and 'Self-Efficacy Scale' were used to collect data. Spearman's Product Moment Correlation, Kruskal Wallis and Mann-Whitney U tests being the non-parametric tests were used in the data analysis in which normal distribution conditions were not fulfilled. According to the results, self-efficacy, task and ego orientations of the wrestlers were found to be at middle level and high level, respectively. The scores of extrinsic and intrinsic motivation were high whereas motivation scores were at middle level. Correlation analysis showed that there were mid-level positive correlation between the task orientation and intrinsic motivation and also a low-level positive correlation between task orientation and extrinsic motivation. Mid-level positive correlations were determined between ego orientation and intrinsic motivation and also between self-efficacy and intrinsic motivation. Significant differences were observed in intrinsic motivation to 'experience stimulation' by gender ($Z=-2.460$, $p<0.05$) and also in task orientations by gender ($Z=-2.164$, $p<0.05$) and by place to start wrestling ($Z=-2.171$, $p<0.05$). There were no significant differences in the level of task and ego orientations, self-efficacy and motivation by age, sport year and the number of being national athletes. The levels of intrinsic motivation and task orientation of girls were higher than the boys with regard to gender and also the individuals who started wrestling in the sports clubs had higher level of task orientation than those who started wrestling in the wrestling training center.

Key Words: Wrestling, Self-Efficacy, Motivation, Perception of Success

Doi: 10.17363/SSTB.20162124008

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D23- J41-J88-L86-M12-M15-M19-M31 ID:308 K:393

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

After the effect of psychological factors in sports and exercise on performance and the effect of the type of exercise done or sports branch on psychological states of individuals gained importance, the studies conducted in this field accelerated (Smith, 2014:261; Türksoy et al., 2015:301-306). Actually a successful performance is the basis of sports and some parts of this basis are composed of psychological factors. The above-mentioned psychological factors become more important for such combat sports as wrestling in which two individuals perform it in order to maintain a superior position by combining body and intelligence (Şahin, 2005; Pettersson and Berg, 2014:98-109).

The wrestlers in the age group of 15-17 are in a period where lots of acquisitions wait for them to obtain on the way to become an elite athlete by their age group and they are determined as reserve athlete for teams. Wrestlers must be provided with not only support in sports, but also with nutritional, social and psychological support at maximum level in this period (Cicioğlu et al., 2007:151-156). The pre-condition for the emergence of successful performance is to give an opportunity to athletes. In studies laying emphasis on the perceptions related to the group success rather than personal success, it is observed that retroactive success perceptions of self-efficacy belief do have any

effect on current and future success expectations (Öcal and Aydın, 2009:155-174). But the case is different for individual sports in which self-discipline improves, the feeling of struggle is gained, the characteristic of leadership and self-confidence develops, dangerous exercises increase the courage, communication skills develop, aggressive urges are removed naturally or in line with the social rules, the relation between athlete and trainer develops and the socialization process of athlete accelerates (Başer, 1986). In individual sports, athletes work with the trainer closely, the leadership styles adopted by the trainer affect the success perception of athletes in a different way, the behaviors in sports environment are enlightened and the definitions of success are shaped (Keleccek et al., 2012:12-14). Roberts, Treasure and Conroy (2007) explain the motivation process with such psychological structures as directing, regulating and strengthening the success behavior (Roberts, Treasure and Conroy, 2007:3-12). While some of the motivation theories concentrate on the intrinsic factors of the individual i.e. the motives being the expression of the needs of individuals, some others focus on the initiatives – i.e. extrinsic factors, given to people from outside - (Davis, 1981; Jones and Lloyd, 2005:929-943). It is stated that the intrinsically motivated behaviors represent intrinsic causality and the extrinsically motivated behaviors represent extrinsic causality



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(Leonard et al., 1999:969-974). It is known that the self-efficacy belief of the athlete affects motivation and performance (Weinberg and Gould, 2014); therefore, self-efficacy, success perception and motivation mainly composed of successful performance are the leading concepts playing an important role in high performance of athletes. Co-evaluation of these concepts is highly important for a detailed analysis of the experiences, skills and performances in the contest environment for both trainers and athletes and for their revision to give an opportunity for arrive successful performance. In this regard, the purpose of this study is to determine the self-efficacy, success perception and motivation levels of junior national wrestling team athletes according to some independent variables and to establish the relation between them.

METHOD

Participants

The junior national athletes constitute the research population and the sample group is a total of 55 athletes composed of 15 girls and 40 boys with an average age of 16.21 ± 0.73 who participated in World Championship final preparation camps in three different categories. While 24 athletes uttered to start wrestling in wrestling training center, 31 athletes expressed to start wrestling in sports clubs.

Data Collection Tools

The Children's Version of the Perception of Success Questionnaire, the Sport Motivation Scale and Self-Efficacy Scale were used in the research as data collection tools.

The Children's Version of the Perception of Success Questionnaire: Turkish translation of the scale created by Roberts, Treasure and Balague (1998) was made by Çetinkalp (2009). There are a total of 12 items in the scale that includes two sub-scales, composed of 6 task items and 6 ego orientation items.

The Sport Motivation Scale: It was developed by Pelletier, Fortier, Vallerand, Tuson, Briere and Blais (1995) and the study on its reliability and validity was performed by Kazak (2004). Sub-dimensions of the scale are composed of intrinsic motivation, extrinsic motivation and amotivation. These three sub-dimensions also have sub-dimensions. The sub-dimensions of intrinsic motivation are intrinsic motivation to know and accomplish and intrinsic motivation to live as stimulus. The sub-dimensions of extrinsic motivation are extrinsic arrangements, introjection, and identification. The last one amotivation is unidimensional. (Kazak, 2004).

Self-Efficacy Scale: General Self-Efficacy Scale was developed by Ralf Schwarzer and his colleagues (1979) in German and translated into Turkish by Teközel (2002). The scale



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contains 10 items designed to make a general assessment regarding self-efficacy.

Data Collection

The scales were implemented on junior athletes of national team by their trainers in three different camp training centers. The scales that were completed by the athletes were received by post.

Data Analysis

Descriptive statistics and Spearman Correlation Analysis were used as the statistical method in assessment of data. Kruskal Wallis and Mann-Whitney U tests ranking among the non-parametric tests were used due to the fact that normal conditions of distribution weren't met.

FINDINGS

Table 1. Average and Standard Deviation Values Related to the Variables of Motivation, Perception of Success and Self-Efficacy

	n	Min.	Max.	Mean	Std. Dev.
Task orientation	55	6,00	30,00	26,5818	4,85604
Ego orientation	55	6,00	30,00	25,4444	5,01946
Intrinsic motivation	55	35,00	84,00	64,0909	11,99579
Extrinsic motivation	55	34,00	84,00	62,3019	12,06168
Amotivation	55	4,00	28,00	11,2364	5,81493
Self-efficacy total	55	23,00	40,00	32,9091	4,46083

Table 2. The Results of Mann Whitney U Analysis Directed to the Difference Between The Sex Variable and Perception of Success

		Sex	n	Mean Rank.	Difference of Mean Rank	U	Z	p
Perception of Success	Being Task Oriented	Female	15	35,43	531,50	195,000	-2,164	,030*
		Male	40	25,21	1008,50			
	Being Ego Oriented	Female	15	29,47	442,00	254,500	-,575	,565
		Male	40	26,74	1043,00			



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A significant difference has been determined in the sub-dimension of task-oriented perception of success in terms of sex ($Z=-2.164$,

$p<0.05$). The scores of females ($X=35.43$) are significantly higher than males ($X=25.21$).

Table 3. The Results of Mann Whitney U Analysis Directed to the Difference Between the Sex Variable and Motivation

	Sex	n	Mean Rank.	Difference of Mean Rank	U	Z	p
Intrinsic Motivation	Female	15	33,13	497,00	223,000	-1,457	,145
	Male	40	26,08	1043,00			
	Female	15	29,70	445,50	275,500	-,483	,629
	Male	40	27,36	1094,50			
	Female	15	36,63	549,50	185,500	-2,460	,014*
	Male	40	24,76	990,50			

* $p<0.05$

A significant difference has been determined by sex in the dimension of “intrinsic motivation to live as stimulus” which is the sub-

dimension of intrinsic motivation ($Z=-2.460$, $p<0.05$). Significant difference could not be found in other sub-dimensions and the dimension of extrinsic motivation ($p>0.05$).

Table 4. The Results of Mann Whitney U Analysis Directed to the Difference Between the Place to Start Sports and Perception of Success

	Place to Start Sports	n	Mean Rank	Differences of Mean Rank	U	Z	p
Task Orientation	Wrestling Training Center	24	23,17	556,00	256,000	-2,031	,042*
	Sports Club	31	31,74	984,00			
Ego Orientation	Wrestling Training Center	24	24,35	584,50	284,500	-1,330	,183
	Sports Club	31	30,02	900,50			



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A significant difference has been determined in the sub-dimension of “task-oriented per-

ception of success” in terms of the place to start sports ($Z=-2.031$, $p<0.05$).

Table 5. The Results of Correlation Analysis Belonging to the Scales

		Task Orien- tation	Ego orienta- tion	In- trinsic Moti- vation	Knowing and Ac- complish- ing	Liv- ing as Stimu- lus	Ex- trinsic motiva- tion	Extrin- sic ar- range- ment	Intro- jection	Identifi- cation	Amoti- vation
Task Orienta- tion	r	1,000									
	p	.									
Ego orientation	r	,823**	1,000								
	p	,000	.								
Intrinsic moti- vation	r	,517**	,494**	1,000							
	p	,000	,000	.							
Knowing and Accomplishing	r	,441**	,417**	,956**	1,000						
	p	,001	,002	,000	.						
Living as Stimulus	r	,502**	,528**	,918**	,780**	1,000					
	p	,000	,000	,000	,000	.					
Extrinsic moti- vation	r	,377**	,376**	,852**	,840**	,777**	1,000				
	p	,005	,006	,000	,000	,000	.				
Extrinsic ar- rangement	r	,252	,362**	,712**	,696**	,710**	,917**	1,000			
	p	,063	,007	,000	,000	,000	,000	.			
Introjection	r	,430**	,439**	,840**	,801**	,792**	,900**	,770**	1,000		
	p	,001	,001	,000	,000	,000	,000	,000	.		
Identification	r	,251	,182	,738**	,758**	,585**	,819**	,614**	,623**	1,000	
	p	,065	,189	,000	,000	,000	,000	,000	,000	.	
Amotivation	r	-,018	,152	,016	-,054	,105	,058	,137	,106	-,001	1,000
	p	,897	,273	,910	,695	,448	,678	,319	,452	,994	.
Self-efficacy	r	,333*	,430**	,528**	,500**	,473**	,471**	,380**	,524**	,352**	,046
	p	,013	,001	,000	,000	,000	,000	,004	,000	,008	,737

After the correlation analysis, it has been concluded that there is a mid-level positively significant relation between task orientation and intrinsic and extrinsic motivation and the same relation between Ego orientation and intrinsic and extrinsic motivation ($p<0.05$). While a mid-level positively significant relation has been observed between self-efficacy

and perception of success and the dimensions of motivation ($p<0.05$), there is no relation found between amotivation and self-efficacy ($p>0.05$).

DISCUSSION

In the study conducted with the purpose of determining the level of self-efficacy, per-



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ception of success and motivation of junior national wrestling team athletes according to some independent variables and investigating the relationship between them, there are a total of 55 athletes composed of 15 girls and 40 boys with an average age of 16.21 ± 0.73 who participated in World Championship final preparation camps in three different categories. 24 of the wrestlers started wrestling in training center and 31 of them started wrestling in sports clubs. Regarding the average values of the scales, self-efficacy of wrestlers was found to be at medium level and their task and ego orientations were found to be at high level. The scores of extrinsic and intrinsic motivation are at high and the amotivation scores are at medium level. High level of success perception can be explained with the fact that the athletes have been selected to participate in the world championship.

It has been determined after this research that the level of being a task oriented is higher for girls in comparison to the boys. Accordingly, it can be stated that girls focus on following things more; skills development, learning a new skill, showing mastership in the duty and working hard. Similar to the results of the research, it has been observed in the study of Duda (1993) concerning university and high school athletes doing individual and team sports that females are more task oriented and males are more ego oriented. Hanrahan and Biddle (2002) have expressed that there is no

a significant difference in task orientation by sex and the girls' scores of task orientation are higher than boys (Hanrahan and Biddle, 2002:1-12). In the study of Canpolat and Çetinkalp (2011), it has been determined that the levels of success perception and self-efficacy don't differ by sex (Canpolat and Çetinkalp, 2011:14-19). In the study of Ersöz, Çetinkalp and Eklund (2015) analyzing the role of self-confidence, general physical competence, ability for sports and life satisfaction in prediction of the achievement goal orientation of athletes playing in national, league and amateur teams, significant difference couldn't be found in the success perception of athletes by sex (Ersöz, Çetinkalp and Eklund, 2015:65-76). Regarding the results of this study, it can be said that girls are more task oriented than boys.

The scores of girls on the intrinsic motivation to live as stimulus which is a sub-dimension of intrinsic motivation have been found to be significantly higher than boys, a significant difference was no found in other sub-dimensions and the dimensions of extrinsic motivation. In contrast to the findings of our research, Ersöz et al. (2012) have determined in their study that there isn't any difference in motivational orientations of athletes by sex (Ersöz et al., 2012:15-26). Kelecek, Altıntaş and Aşçı (2010) have established in their study conducted on elite volleyball players that the scores of female volleyball players



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are higher than males in the sub-dimensions of “Extrinsic Arrangement, Identification and Amotivation” regarding the motivational orientations of athletes (Kelecsek, Altıntaş and Aşçı, 2010:102-103). Following the study of Çetinkalp et al. (2011), it has been stated that there is a significant difference in the dimension of extrinsic arrangement by sex and the scores of male athletes for extrinsic arrangement are higher than female athletes (Çetinkalp et al., 2011:305-310). In conclusion, it can be uttered that girls continue to do sports to have more fun and to achieve stimulant satisfactions when compared to boys.

A significant difference was no observed in self-efficacy levels of wrestlers by the variable of sex. Similar to our research findings, Öcal and Şenel (2016) have stated that there isn't a significant difference between sexes in terms of self-efficacy (Öcal and Şenel, 2016:138-154). It can be stated that self-efficacy plays an important role in determining how well the athletes behave as necessary to cope with the problems encountered and how they motivate themselves.

It has been established that the task orientation scores of the athletes who started wrestling in sports clubs are significantly higher than those who started wrestling in training centers. A significant difference could not be found between the levels of self-efficacy and motivation. This difference can be explained

with the fact that all expenditures of the athletes in wrestling training centers are covered by the government and the athletes who started in clubs try to make personal efforts to exist and their need for success is higher. In the study of Atan and Ünver (2016) conducted on wrestlers, the psychological needs of boarder and extern athletes were examined and difference was no found between two groups only in the sub-dimension of dominance but there was a difference found between these two groups in the sub-dimensions of success, relation and autonomy.

A positively significant relation was found between the success perception of wrestlers and motivation, there was a mid-level positively significant relation between the dimension of self-efficacy, perception of success and motivation. Considering this result, it can be said that high self-efficacy of the athletes is an important predictor on the perception of success and motivation. In the study of Canpolat and Çetinkalp (2011), they express that there is a significant relation between self-efficacy and task and ego orientation, task orientation is the significant determiner of self-efficacy (Canpolat and Çetinkalp, 2011:14-19).

In conclusion, it will be important for trainers and sports psychologists to know and apply the methods directed to increasing the self-efficacy levels considering the effect of self-efficacy not only on motivation and success



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perception of athletes, but also on personality development and performance. Moreover, trainers can ensure an increase in self-efficacy levels of adolescent athletes by applying the teaching methods that will lead them to success and by creating environments in which athletes can actively participate in exercise. While creating the appropriate conditions for teaching, personality development in addition to sports performance can be supported by providing the teaching practices for supporting task orientation. In this regard, providing psychological support especially to adolescent athletes will contribute to the improvement of their psychological skills and performance and to new studies to be conducted on the role of different variables.

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PERCEIVED STRESS, MOOD STATES ASSOCIATED WITH OPTIMAL PERFORMANCE AND DECISION MAKING STYLES IN ELITE FEMALE BASKETBALL PLAYERS ¹

ELİT KADIN BASKETBOL OYUNCULARINDA ALGILANAN STRES, OPTİMAL PERFORMANS DUYGU DURUMU VE KARAR VERME STİLLERİ

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Öz: Çalışmanın amacı elit kadın basketbol oyuncularının algılanan stres, optimal performans duygu durumu ve karar verme stillerinin bazı bağımsız değişkenlere göre incelenmesi ve aralarındaki ilişkinin ortaya koyulmasıdır. Araştırmanın çalışma grubunu 2015-2016 sezonunda Türkiye Kadınlar Basketbol Süper Liginde oynayan 63 kadın sporcu (yaş=24.20±5.12) oluşturmaktadır. Veri toplama aracı olarak, Melbourne Karar Verme Ölçeği, Sürekli Optimal Performans Duygu Durumu Ölçeği ve Algılanan Stres Ölçeği kullanılmıştır. Verilerin analizinde Pearson Momentler Çarpımı Korelasyon analizi, t testi ve Tek Faktörlü Varyans Analizi kullanılmıştır. Yaşa göre optimal performans duygu durumu alt boyutlarından kontrol duygusu alt boyutunda anlamlı farklılık tespit edilmiştir (p<0.05). Basketbol oynama yılına göre ise açık hedefler alt boyutunda anlamlı farklılık bulunmuştur (p<0.05). Yaş ve basketbol oynama yılına göre algılanan stres ve karar verme stillerinde anlamlı farklılık görülmezken; sakatlık geçirme durumlarına göre algılanan stresin alt boyutlarından olan yetersiz öz yeterlik algılarında anlamlı farklılık görülmüştür (p<0.05). Korelasyon analizi sonucunda, karar verme stillerinden dikkatli karar verme alt boyutu ile optimal performans duygu durumu alt boyutlarından açık hedefler, belirli geri bildirim ve göreve odaklanma arasında pozitif yönde düşük derecede anlamlı ilişki olduğu tespit edilmiştir. Kaçınan karar verme ile yetersiz öz yeterlik algısı arasında ise negatif yönde düşük derecede anlamlı ilişki olduğu tespit edilmiştir. Yaşça büyük sporcuların açık hedeflerde daha iyi oldukları ve tecrübesi arttıkça kontrol duygusunun arttığı ayrıca sakatlık geçirmiş sporcuların daha yetersiz öz-yeterlik duygusuna sahip olduğu söylenebilir.

Anahtar Kelimeler: Basketbol, Karar Verme, Stres, Optimal Performans Duygu Durumu

Abstract: The aim of this study is to examine perceived stress, mood states associated with optimal performance and decision making styles in elite female basketball players according to the some independent variables and to reveal the relationship between them. The study group of the research consisted of 63 female athletes (=24.20±5.12) who play in the 2015–16 Turkish Women's Basketball Super League. The Melbourne Decision Making Questionnaire, the Flow State Scale-2 and the Perceived Stress Scale were used for data collection. The Pearson product-moment correlation, the t-test and the one-way ANOVA were used for analysis of data. It was found that there was a statistically significant difference in the sense of control that is the subscale of mood states associated with optimal performance according to age (p<0.05). It was also found that there was a statistically significant difference in the clear goals subscale according to experience increase (p<0.05) and there were not statistically significant differences in perceived stress and decision making styles according to experience increase and age. But there was a statistically significant difference in poorer self-efficacy sense that is one of the perceived stress subscales according to injury experience (p<0.05). Upon the correlation analysis, it was found that there was a statistically significant weak positive relation between 'the subscale of making careful decision that is the one of the decision making styles' and 'clear goals, specific feedback and focus on the task that are the subscales of mood states associated with optimal performance'. It was found that there was a statistically significant weak negative relation between avoidant decision making and poorer self-efficacy sense. The results showed that older athletes are better in open targets and sense of control of athletes are increasing as experience increases and also injured athletes have poorer self-efficacy sense.

Key Words: Basketball, Decision Making, Stress, Mood States Associated with Optimal Performance

Doi: 10.17363/SSTB.20162124013

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SSTB

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D23-J28-J81-L10-L83-M1-M10- ID:309 K:396

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Athletic achievement is under the influence of physical performance, mental performance and psychological performance (Karademir and Çoban, 2011: 25-41). One of the ways in which the psychological processes that can contribute to the performance of athletes can be explained by examining the psychological structures associated with optimal performance (Doron and Gaudreau, 2014: 3-13). Accordingly, optimal performance emotional state has become one of the important structures and concepts that are considered in terms of reflecting the mental and psychological state that is formed by the optimal performance experience experienced in sport and exercise environment (Nakamura and Csikszentmihalyi, 2014: 239-263). Optimal performance emotional state theory, based on the idea of optimization of nine components listed as 'task challenge / skill balance, action-awareness association, clear goals, specific feedback, task focus, sense of control, reduced self-awareness' may cause an optimal stimulation state, thus emphasizes that performance may be negatively affected (Certel et al., 2013: 17-25; Smith, 2014: 261).

According to Csikszentmihalyi, the optimal performance emotional state occurs when the athlete has the ability to accomplish tasks that require high levels of struggle and difficulty and control over these tasks. Csikszentmih-

alyi emphasizes that if a model does not have the skills to accomplish tasks that require high levels of struggle, the athlete feels that he or she has a sense of disinterest in the case of boredom, distress, skill being low and lacks struggle if the skills are higher than the requirements of the task (Moneta, 2004: 181-217).

On the other hand, the effect of stress, a concept that affects individuals and influences their behavior, their relations with other people and their productivity, on the athletes' sportive and social lives cannot be denied (Stults-Kolehmainen and Sinha, 2014: 81-121). Athletes are struggling to cope with stress in the face of unintended and unexpected events and the perceived stress and stress-coping behaviors are different in each athlete (Kölling et al., 2015: 529-542). Stress can cause some confusion in athletes' emotions and cause them to make some unfavorable movements, as well as forgetting some movements that they know very well and have performed very well in training many times (Tazegül, 2012: 13-22). Another concept that may be related to optimal performance is decision-making, which means getting results or solving some problems (Gibson et al., 1994: 608). The use of decision-making strategies can vary depending on the age of the individual, the situation encountered, and the events in which he lives. A large number of studies on deci-



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

sion-making styles in sporting environments, where decisions are not possible to be made, are predominantly based on sports experience (Elbe and Brand, 2016: 32-44; Barkoukis et al., 2014: 212-219; Dehkordi et al., 2014: 2569-2572). Having more or less experience can lead to differences in decision-making styles (Certel et al., 2013: 16-27).

When the studies in the literature are examined by taking Csikszentmihalyi model into consideration, the relationship between the optimal performance emotion state and various concepts is frequently encountered (Jackson, 2001: 129-153; González-Cutre et al., 2009: 422-440; Pineau et al., 2014: 142-158; Klinger, 2014: 257) but no studies that deal with stress and decision making concepts in sports environment are found. Accordingly, perceived stress, optimal performance emotion status and decision-making styles of elite female basketball players were investigated.

MATERIAL and METHOD

Research Group

The study group of the research in the descriptive research model constituted 63 female athletes ($= 24.20 \pm 5.12$) who played in Turkey Women's Basketball Super League during the 2015-2016 season. 73% of the athletes have more than 10 years of sports experience.

Data Collection Tools

In the study, 'Personal Information Form', Optimal Performance Emotion Status-2 Scale, Melbourne Decision Making Scale and Perceived Stress Scale were used as data collection tools.

Continuous Optimal Performance Emotion Status-2 Scale (COPESS): The scale, developed by Jackson and Eklund (2004) and adapted to Turkish by Aşçı et al (2007) consists of 34 items and 9 sub-dimensions (Aşçı et al., 2007: 182-196). Sub-dimensions are Task Challenge/Skill Balance, Action-Awareness Association, Clear Goals, Specific Feedback, Task Focus, Sense of Control, Reduced Self-Awareness, Time Conversion, Goal Attainment Experience and the scale which is in the 5-point Likert scale type is scored between "Never (1)" and "Always (5)".

Melbourne Decision Making Scale (MDMS): The scale developed by Mann et al. (1998) is adapted to Turkish by Deniz (2004) (Deniz, 2004: 23-35). The scale consists of 28 items and two parts. In the first part, 6 items and one sub-dimension; Determination of self-esteem in decision-making; in the second part, 22 items and 4 sub-dimensions; Careful Decision Style, Avoidance Decision Style, Deliberative Decision Style and Panic Decision Style. Scale is scored as "Correct



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

(2)", "Sometimes Correct (1)," Not Correct (0).

Perceived Stress Scale (PSS): The scale developed by Cohen, Kamarck and Mermelstein (1983) is adapted to Turkish by Eskin, Harlak, Demirkıran and Dereboy (2013) (Eskin, Harlak, Demirkıran and Dereboy, 2013: 132-140). There are 2 sub-dimensions of scale consisting of 14 items: Inadequate Self-Efficacy Perception and Stress / Disturbance Perception. The scale items are of the 5-Likert type, ranging from "Never (0)" to "Very often (4)".

Collection of Data

The data collection tools used in the research were applied in the 2015-2016 season, following the necessary permits are obtained by contacting with managers of the teams the athletes play in, by handing out before / after the training. Participants voluntarily participated in the survey.

Analysis of Data

In the evaluation of the obtained data, as statistical methods; Descriptive statistics, Pearson Moments Multiplication Correlation Analysis, t-test and One-Factor Variance Analysis (ANOVA) were used.



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

FINDINGS

Table 1. Distribution of Scale Scores

		Number of Articles	n	Avg.	Sd.	Min.	Max.
PSS	PSS Total	14	63	30.73	6.28	16.00	46.00
	Insufficient Self-Efficacy Perception	7	63	15,55	4,17	4,00	24,00
	Stress-Perception of Discomfort	7	63	15,17	3,58	7,00	24,00
COPESS	COPESS Total	34	63	125,95	16,81	87,00	180,00
	Difficulty of Task-Skill Balance	3	63	11,34	2,04	82,00	170,00
	Action Awareness Partnership	3	63	10,41	1,92	7,00	15,00
	Open Targets	4	63	15,50	2,91	5,00	15,00
	Specific Feedback	4	63	14,65	2,37	7,00	20,00
	Mission Focus	4	63	14,87	3,02	9,00	20,00
	Control Sensation	4	63	14,73	2,20	7,00	20,00
	Decreasing Self Awareness	4	63	13,84	2,98	11,00	20,00
	Transition of Time	4	63	14,41	2,92	6,00	20,00
	Experiencing Reasoning	4	63	16,15	2,67	6,00	20,00
MDMS	Self-esteem	6	63	5.98	1.85	3.00	12.00
	Careful Decision Style	6	63	8.23	2.45	3.00	12.00
	Avoidant Decision Making Style	6	63	4.61	2.88	0.00	12.00
	Deferred Decision Making Style	5	63	3.87	2.18	0.00	9.00
	Panic Decision Making Style	5	63	4.19	2.26	0.00	9.00



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(TRADEMARK)

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Table 2. Anova Results of Optimal Performance Emotional State Scores by Age

	Ages 17-20 (n=23)		Ages 21-24 (n=22)		Ages 25 and above (n=18)		F	p
	Avg.	Sd	Avg.	Sd	Avg.	Sd		
Difficulty of Task-Skill Balance	11.04	2.16	11.18	2.15	11.94	1.69	1.10	0.33
Action-Awareness Partnership	9.82	1.69	10.59	1.65	10.94	2.15	1.90	0.15
Open Targets	15.26	2.75	14.72	3.42	16.78	2.01	2.73	0.07
Specific Feedback	14.26	2.57	14.22	2.34	15.67	1.88	2.42	0.09
Mission Focus	14.78	3.13	14.22	3.06	15.78	2.77	1.33	0.27
Control Sensation	14.52	2.37	14.09	1.57	15.78	2.36	3.29	0.04*
Decreasing Self Awareness	13.35	3.06	13.36	2.46	15.06	3.26	2.16	0.12
Transition of Time	13.82	3.17	14.50	2.82	15.06	2.73	0.90	0.41
Experiencing Reasoning	16.44	2.95	15.46	2.67	16.67	2.24	1.21	0.30
COPESS	123.30	16.97	122.36	16.77	134.17	14.59	3.00	0.57

Analyses have shown that there is a significant difference in the sense of control ($F = 3.29, p < 0.05$) sub-dimension of Optimal Per-

formance Emotional State-2 Scale according to age variable (Table 2).

Table 3. Results of t-test According to Disability Status of Perceived Stress Scores

Perceived Stress Scale	Yes(n=5)		No (n=58)		t	p
	Avg.	Sd	Avg.	Sd		
Stress / Perception of Discomfort	15.40	3.57	15.15	3.61	0.15	0.89
Insufficient Self-Efficacy Perception	18.60	2.70	15.29	4.19	2.49	0.04*
PSS Total	34.00	3.81	30.44	6.39	1.87	0.11

Analyses showed that the Perceived Stress Scale had a significant difference in the sub-dimension of inadequate self-efficacy per-

ception ($F = 3.85, p < 0.05$) compared to the disability status variable ($t = 2.49, p < 0.05$) (Table 3).



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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 4. Anova Results According to Basketball Playing Year of Optimal Performance Emotional State Scores

Scale	5-9 years(n=17)		10-14 years(n=30)		15 years and above (n=16)		F	p
	Ort.	Ss	Ort.	Ss	Ort.	Ss		
Difficulty of Task-Skill Balance	11.25	2.27	11.30	2.18	11.75	1.48	0.48	0.62
Action-Awareness Partnership	10.41	2.00	10.26	1.92	10.68	1.92	0.24	0.78
Open Targets	15.06	2.70	14.93	3.31	17.06	1.61	3.29	0.04*
Specific Feedback	14.17	2.87	14.57	2.50	15.31	1.25	0.98	0.38
Mission Focus	14.94	3.19	14.37	3.26	15.75	2.27	1.10	0.34
Control Sensation	14.29	2.52	14.50	2.25	15.62	1.50	1.87	0.16
Decreasing Self Awareness	13.94	2.79	13.37	2.94	14.62	3.26	0.94	0.40
Transition of Time	13.94	3.41	14.37	2.88	15.00	2.50	0.54	0.59
Experiencing Reasoning	16.41	2.98	15.80	2.86	16.56	1.93	0.52	0.60
COPESS	124.23	19.39	123.46	17.89	132.86	8.41	1.72	0.18

Analyses showed that there was a significant difference in the Open sub-dimension of the Optimal Performance Emotion State-2 Scale compared to basketball playing year variable ($F = 3.29$, $p < 0.05$). According to the basket-

ball playing year variable, scores obtained from sub-dimensions of Perceived Stress Scale and Decision Making Scale did not differ significantly ($p > 0.05$) (Table 4).

Table 5. Correlation Results Between Perceived Stress, Optimal Performance Emotional State and Decision Making Styles

		Careful Decision Making	
		r	p
Optimal Performance Emotional State	Clear Goals	.276*	0.02
	Specific Feedback	.278*	0.02
	Task Focus	.327**	0.00
		Avoidant Decision Making	
		r	p
Perceived Stress	Insufficient Self-Efficacy Perception	-.282*	.025



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**p<0.01, *p<0.05

Participants were found to have a positive and low level of correlation between the total scores from Careful Decision Making sub-dimension of the Decision Making Scale and Clear Goals, Specific Feedback and Mental Focus sub-dimensions of Optimal Performance Emotional State Scale. There was a significant negative correlation between the Avoidant Decision Making sub-dimension of the Decision Making Scale and the Inadequate Self-Efficacy Perception sub-dimension of the Perceived Stress Scale (Table 5).

DISCUSSION and CONCLUSION

The study group of the research, which was conducted in order to examine the perceived stress, optimal performance emotional state and the decision-making styles of the elite female basketball players, constituted of 63 women athletes playing in the Women's Basketball Super League in 2015-2016 season.

According to research findings, perceived stress and self-esteem levels of decision-making of the participants are moderate. As a result of the research, it is determined that the lowest average value of decision making styles is in the deferential decision making style and the highest average value is the careful decision making style. This finding is in parallel with the work of Kanta, Altıntaş and Cook (2012). Kat (2009) examined the

stress levels of individual and team athletes and found that individual athletes had a higher level of stress and that basketball players' continuous optimal performance emotion states were above the middle level (Kat, 2009: 50).

The results of the research show that action-awareness association sub-dimension of optimal performance emotional state of the participants aged 25 and above are higher from participants aged 17-20; and higher than participants aged 21-24 in sense of control sub-dimension. The results obtained from Çetinkalp (2011) study are similar to this finding (Çetinkalp, 2011: 43). It can be said that emotional states of older athletes have also developed with maturation and sports experience. On the other hand, perceived stress and decision making styles do not differ according to age. Studies by Kat (2009), Tuncel (2000), Baştuğ and Çumralıgil (2004) support this finding (Kat, 2009: 51, Tuncel, 2000: 229, Baştuğ and Çumralıgil, 2004: 95-100).

Another finding from the research is that the athletes who have sustained an injury have a higher perception of self-efficacy than those who haven't. In the study conducted by Dorak (1993) on the elite athletes, there was no difference in the self-esteem dimension of the athletes returning to sports after sustaining an injury and had treatment (Dorak, 1993: 82), in a study conducted by Aydoğan



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

(2014), it was determined that self-esteem of the athletes who have sustained an injury were low after the treatment (Aydoğan, 2014: 46). There is no difference in the optimal performance emotional state and decision style of the athletes according to the variance of disability status. In a study that investigated the relationship between stress levels of volleyball players and the incidence of injuries, there was no correlation between the stress levels of the athletes and the incidence of injury (Williams, Tonymon and Wadsworth, 1986: 38-43).

When the optimal performance emotional state is analyzed according to participants' basketball playing year variable, the clear goals of 15 years and over basketball players are higher than those who play basketball for 10-14 years. It is believed that this is due to the fact that experienced athletes can make more clear and planned goals by making use of their experiences. Çetinkalp (2011) found that there is a significant relationship between experience and task challenge-skill balance, action-awareness association, clear goals, specific feedback and sense of control in the study of where he examined continuous levels of optimal emotional state of dancers (Çetinkalp, 2011: 44). Perceived stress and decision-making styles do not differ according to the years of playing basketball. In the study by Keleşek, Altıntaş and Chef (2012),

aimed at determining the decision-making styles of the athletes, there was no difference in decision style in terms of sports experience.

As a result of the correlation analysis, it has been found that there is a low level of positive relationship between decision making style and careful decision making and optimal performance emotion state sub-dimensions' clear goals, specific feedback and relative focus. The careful decision-making style is the choice after the individual carefully searches for the necessary knowledge and carefully evaluates the alternatives before making a decision (Deniz, 2004: 23-35). Clear goals include the feeling that the athlete clearly knows the requirements of the movement and the objectives for the movement; How the individual feels about performance in terms of his / her motivations and goals, how the individual is able to obtain self-feedback/information from the performance exhibited, and the focus on relativity refers to completely focusing on the task at hand Cook et al., 2007: 182-196). According to our research findings, female athletes who embrace more careful decision-making style feel more focused on clear goals, specific feedback and task focusing. The results also show that there is a low level of negative correlation between avoidant decision making style and inadequate self-efficacy perception. The avoidant deci-



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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sion-making style is that the individual tends to abstain from making decisions, tends to leave decisions to others, and is thus trying to get rid of making decisions by transferring responsibility to another (Deniz, 2004: 23-35). Inadequate self-efficacy perception is a component of perceived stress and refers to situations such as feeling that one cannot cope effectively with significant changes in his or her life and feeling not trusting in the ability to handle personal problems (Eskin et al., 2013: 132-140). According to the results of correlation analysis, the inferior self-efficacy perceptions of female athletes who adopt more of the avoidant decision-making style are lower. For this reason, it may be that the person who handed over the responsibility to another may with avoidant decision making by alleviating the burden of responsibility for himself / herself and avoiding the situation.

As a result; It is thought that the basketball player's continuous optimal performance emotion states are caused by the fact that the research group is an elite basketball player. Making efforts to increase internal motivation to develop an optimal performance emotion state, expressed as internal pleasure, can allow the perceived stress to be reduced at the same time as providing the optimal performance emotion state and allowing for accurate and effective decisions at the time of the match as a result of reduced stress.

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International Refereed Academic Journal of Sports, Health and Medical Sciences

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D23-J28-J81-L10-L83-M1-M10- ID:309 K:396

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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GÜNLÜK AKTİVİTELERE BAĞLI EL - BİLEK SORUNLARI ¹

HAND – WRIST DISORDERS CAUSED BY DAILY ACTIVITIES

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Öz: Bu çalışma, günlük aktivitelere bağlı el-bilek sorunlarının yaygınlığını saptamak amacıyla planlanmıştır. Tanımlayıcı tipteki bu araştırma, 16 Kasım 2015 - 30 Haziran 2016 tarihleri arasında Afyon Devlet Hastanesi polikliniklerine başvuran bireylere (n=400) uygulanmış, veri toplamada araştırmacı tarafından geliştirilen ve 3 bölümden oluşan anket formu kullanılmıştır. Araştırmaya katılanların yaşları 18 ile 86 arasında değişmektedir ve yaşlarının ortanca değeri 40.0'dır. Katılımcıların %67.8'i kadınlardan oluşurken, %73.5'i evlidir. Araştırma sonunda el ve el bileğinin sıklıkla kullanıldığı faaliyetler arasında bulaşık yıkamanın ilk sırada yer aldığı, katılımcıların el bileğinde ağrı, parmakların erken yorulması ve parmaklarda uyuşukluk şikayetlerinin bulunduğu, katılımcıların yaşlarıyla el ve el bileğiyle ilgili şikayetleri arasında ve el ve el bileğiyle ilgili şikayetlerine tanı konulma durumu arasında istatistiksel olarak anlamlı ilişki bulunduğu belirlenmiştir.

Anahtar Kelimeler: Türk Toplum, Günlük Aktivite, El Sorunları, Bilek Sorunları

Abstract: This study was planned to determine the prevalence of hand-wrist disorders caused by daily activities. Designed as a descriptive research, this study was conducted with persons (n=400) who were treated at Afyon State Hospital polyclinics between November 16, 2015 and June 30, 2016, data were collected by using a three-part survey form developed by the researcher. The ages of the participants ranged from 18 to 86 years and the median age was 40.0. While females constituted 67.8% of the participants, 73.5% were married. As a result of the research, it was determined that washing-up ranked first among the activities in which hands and wrists were frequently used and that a majority of the complaints involved wrist pain, rapid onset of tiredness in the fingers and they finger numbness. Additionally, it was found that the complaints of the females differed from those of the males, that the degree of difference was not high enough to be statistically significant and that the diagnostic status of the complaints varied according to gender.

Key Words: Turkish Society, Daily Activity, Hand Disorders, Wrist Disorders

Doi: 10.17363/SSTB.20162124007

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: C10-J23-L82-M30 ID:305 K:391

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Musculoskeletal disorders are complex conditions that are commonly observed in every stage of life, starting from as early as birth. A wide spectrum of diagnostic possibilities should be considered when evaluating these disorders. Everything from ergonomic inadequacy of devices or equipment, incorrect posture and sitting positions and long working hours can cause musculoskeletal pain (Hüner et al., 2013: 75-88; Ulusam et al., 2001: 26-32).

Common musculoskeletal disorders include back pain, osteoarthritis, rheumatoid arthritis, juvenile arthritis and osteoporosis (AIHW, 2016). Various musculoskeletal disorders related to the hands and wrists are relatively frequently observed, particularly in conjunction with certain activities performed.

The forearm, hand and wrist are among the body parts most often used in performing daily activities. Wrist functions are related to the positions of hands when engaged in catching and grasping activities. Minor, repetitive actions executed using fingers, wrists and elbows may cause disorders, particularly in wrist alignment. In such disorders, the tissues on which the muscles passing through the wrists adhere to bones are bruised and compressed, resulting in numbness and pain of the hand, decreased ability to move the thumb and

weakening in squeezing capacity of the hand. In other words, hand mobility is disrupted (Durmaz, 2009:1-18; Ministry of Education, 2014; Kuran, 2014: 43-49). Today, hand and wrist disorders are largely the result of computer use, incorrect ergonomics, mechanical loading due to manually lifted weights and various inflammatory neurological problems (Kuran, 2014: 43-49).

Forearm, hand and wrist disorders can be attributed to numerous causes. Nonspecific widespread pain in the forearm or wrist can be the result of various conditions, such as fibromyalgia, tenosynovitis, tendinitis or de quervain disease with radiation, carpal tunnel syndrome, cubital tunnel syndrome, osteoarthritis (affecting the wrist, the bottom of the thumb or carpometacarpal joints) and rheumatoid arthritis (Palmer, 2003: 113-135). These particular problems, among others, serve as significant causes of morbidity. However, because they are included in a heterogeneous disease group and constitute nonspecific regional pain syndromes, it is difficult to determine their frequency and the burden they place on health (Andréu et al., 2011: 31-42).

As hand functions play an important role in performing daily activities, the feeling of pain in this part of the body can lead to intense anxiety in many patients, particularly those working, for example, as keyboard operators, clerks, musicians or craft workers as well as



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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ISSN Print: 2146-8508 Online 2147-1711

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(TRADEMARK)

(2015/04315- 2015-GE-18972)

those whose lifestyle require intensive use of their hands (Andréu et al., 2011: 31-42).

Although hand and wrist disorders commonly occur as part of daily life activities, these disorders can reach a level of discomfort, where sleep quality as well as general quality of life can be affected (Aptel et al., 2002: 546-555; Ferreira and Saldiva, 2002: 147-153; Buckle and Devereux, 2002: 207-217; Fathallah, 2010: 738-743; Eatough et al., 2012: 554-563; Cook et al., 2000: 347-356; Atroshi et al., 2007: 3620-3625). While there have been a large number of studies addressing musculoskeletal disorders concerning the hand and wrist, little to no research has been conducted on the prevalence of hand and wrist disorders caused by daily activities.

The purpose of this research was to determine the prevalence of hand-wrist disorders caused by daily activities.

METHOD

This descriptive research study was conducted with persons (n=400) who were treated

at Afyon State Hospital polyclinics between November 16, 2015 and June 30, 2016. In the collection of the data, the questionnaire form was used by prepared the researcher through literature survey (Durmaz, 2009:1-18; Hüner et al., 2013: 75-88; Ulusam et al., 2001: 26-32; Aptel et al., 2002: 546-555; Ferreira and Saldiva, 2002: 147-153; Buckle and Devereux, 2002: 207-217; Fathallah, 2010: 738-743). Prior to conducting the research, written permission was first obtained from the Afyon State Hospital, and medical ethical approval was received by Selçuk University, Faculty of Medicine Ethics Committee (12/08/2015-2015/310). Verbal consent to voluntarily participate in the study was obtained from all of the study participants.

The data obtained at the end of the survey administration process were evaluated by using the SPSS 17.0 (Statistical Package for Social Sciences for Windows) software package. Additional statistical analyses of the data were performed using Kruskal-Wallis and Mann-Whitney U tests.



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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: C10-J23-L82-M30 ID:305 K:391

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

RESULTS

Table 1. Socio-Demographic Characteristics Of The Participants

		Age Median: 40.0 (18-86)			
Gender	n	%	Occupation	n	%
Female	271	67.8	Unemployed	196	49.0
Male	129	32.2	Civil Servant	62	15.5
Marital Status			Self-Employment	45	11.3
Single	106	26.5	Worker	42	10.4
Married	294	73.5	Other	43	10.8
Education Level			Retired	12	3.0
Illiterate	58	14.4	Monthly Income Status		
Literate	40	10.0	Good	83	20.8
Primary School	102	25.5	Middle	274	68.5
Secondary School	43	10.8	Bad	43	10.7
High School	79	19.8	Total	400	100.0
University	78	19.5			

The ages of the research participants varied in range between 18 and 86, with the median age being 40. Females constituted 67.8% of

the participants and 73.5% of the participants were married (Table I)



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October / November / December - Autumn Winter Period Issue: 21 Year: 2016

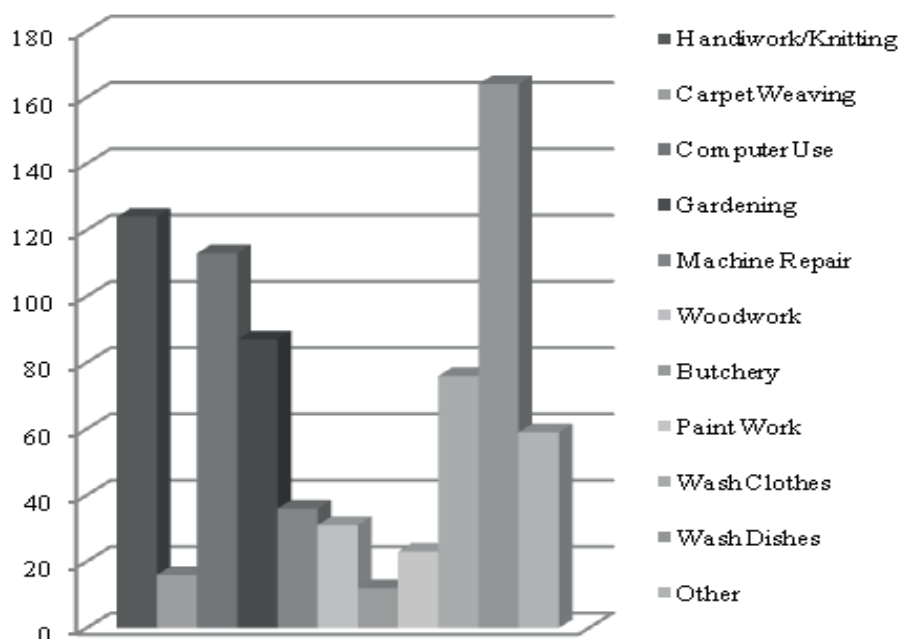
GEL CODE: C10-J23-L82-M30 ID:305 K:391

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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*More than one answer has been given.

Figure I. The Some Activity Frequently Using Hands And Wrists

In Figure 1, the 741 responses provided by the study participants regarding the activities in which the hands and wrists were frequently used show that washing-up ranked first among these activities, with a percentage of 22.1%, handiwork/knitting ranked second with 16.7% and computer use ranked third with 15.2%. Among the 59 responses under the “other” option, it was found that 74.6%

of the activities involved cleaning tasks and 13.5% construction works.

The activities performed by the participants by using their hands and wrists are presented in Table 2, which shows that a majority of the participants (76.4%) repeated several times a day those activities performed frequently, approximately half of them (49.7%) conducted the activities at intervals of 1–2 hours and 19% at intervals of less than 1 hour.



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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(TRADEMARK)

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Table 2. Comparison Of Participants' Ages In Terms Of The Activities Performed Using Their Hands And Wrists

The Frequency of the Activity Performed Using Hands and Wrists	n*	%	X ²	p
Once a Day	43	11.8	9.721	.084**
Several Times a Day	278	76.4		
Once a Week	18	4.9		
Several Times a Week	10	2.7		
Once a Month	6	1.7		
Several Times a Month	9	2.5		
Total	364	100.0		
The Duration of the Activity Performed Using Hands and Wrists	n*	%	X ²	p
Less Than 1 Hour	68	19.0	5.805	.121**
1-2 Hours	178	49.7		
3-4 Hours	58	16.2		
More Than 5 Hours	54	15.1		
Total	358	100.0		
Complaints Made About Hands and Wrists	n	%	Mann-Whitney U	p
Yes	229	57.3	13693.500	.000***
No	171	42.7		
Total	400	100.0		
Diagnosis Made of the Complaint About Hands and Wrists	n	%	Mann-Whitney U	p
Yes	65	16.2	8399.500	.004***
No	335	83.8		
Total	400	100.0		

*Incomplete answered.

**Kruskal-Wallis Test was conducted.

***Mann-Whitney Test was conducted.



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October / November / December - Autumn Winter Period Issue: 21 Year: 2016

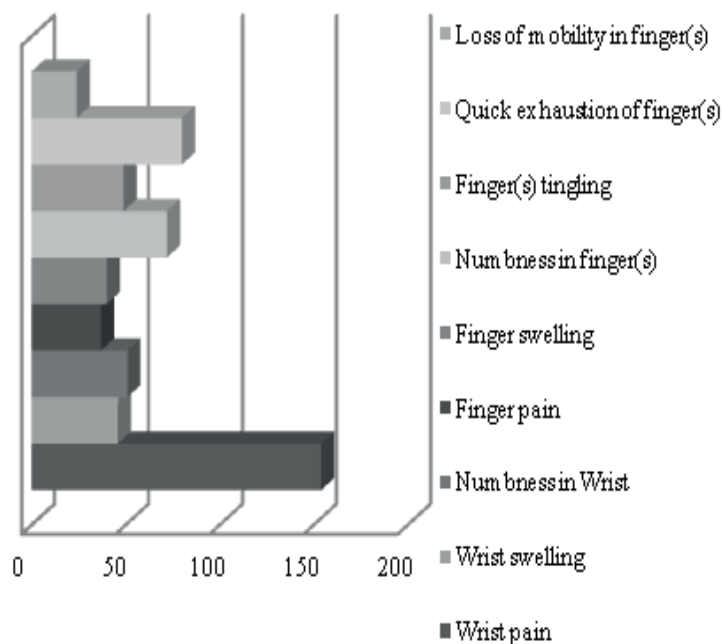
GEL CODE: C10-J23-L82-M30 ID:305 K:391

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)



*More than one answer has been given.

Figure II. Hand And Wrist Complaints Of The Participants

In the total of 553 responses obtained from the participants in regard to hand and wrist complaints, it was determined that 27.8% of the complaints were related to wrist pain, 14.5% to quick exhaustion of the fingers. Table 3 presents the activities performed by the participants by using their hands and

wrists according to gender. Here it shows that 60.5% of the female participants and 50.4% of the male participants reported disorders, with 18.8% of the females indicating that a diagnosis of their complaint had been obtained while 10.9% of the males claimed the same.



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 3. Comparison Of Participants' Genders In Terms Of Activities Performed Using Hands And Wrists

	Female		Male		Total			
	n	%	n	%	n*	%	X ²	p
The Frequency of the Activity Performed Using Hands and Wrists								
Once a Day	31	12.3	12	10.7	43	11.8	7.696	.053
Several Times a Day	199	79.0	79	70.5	278	76.4		
Once a Week	15	6.0	13	11.6	28	7.7		
Other	7	2.7	8	7.2	15	4.1		
Total	252	100.0	112	100.0	364	100.0		
The Duration of the Activity Performed Using Hands and Wrists								
	n	%	n	%	n*	%	X ²	p
Less Than 1 Hour	59	23.6	9	8.3	68	19.0	29.290	.000
1-2 Hours	133	53.2	45	41.7	178	49.7		
3-4 Hours	28	11.2	30	27.8	58	16.2		
More Than 5 Hours	30	12.0	24	22.2	54	15.1		
Total	250	100.0	108	100.0	358	100.0		
Complaints Made About Hands and Wrists								
	n	%	n	%	n	%	X ²	p**
Yes	164	60.5	65	50.4	229	57.3	3.664	.066
No	107	39.5	64	49.6	171	42.7		
Total	271	100.0	129	100.0	400	100.0		
Diagnosis Made of the Complaint About Hands and Wrists								
	n	%	n	%	n	%	X ²	p**
Yes	51	18.8	14	10.9	65	16.2	4.076	.044
No	220	81.2	115	89.1	335	83.8		
Total	271	100.0	129	100.0	400	100.0		

*Incomplete answered.

** Fisher's Exact Test was applied.



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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GEL CODE: C10-J23-L82-M30 ID:305 K:391

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(TRADEMARK)

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Table 4. Comparison Of The Number Of The Daily Activities The Participants Performed Using Their Hands And Wrists With The Number Of Complaints

Number of the Daily Activities the Participants Performed Using Their Hands and Wrists				
	n*	%	X ²	p
1	108	29.5	12.347	.015
2	113	30.9		
3	126	34.4		
4	16	4.4		
5 and over	3	0.8		
Total	366	100.0		
The Frequency of the Activity Performed Using Hands and Wrists				
	n*	%		
Once a Day	43	11.8	.238	.888
Several Times a Day	278	76.4		
Once a Week	28	7.7		
Other	15	4.1		
Total	364	100.0		
The Duration of the Activity Performed Using Hands and Wrists				
	n	%		
Less Than 1 Hour	68	19.0	3.145	.370
1-2 Hours	178	49.7		
3-4 Hours	58	16.2		
More Than 5 Hours	54	15.1		
Total	358	100.0		

*Incomplete answered

Table 4, compares the number of the daily activities the participants performed by using their hands and wrists with the number of complaints, 34.4% of the participants expressed that they performed three activities in which the hands and wrists were frequently used, 30.9% (an approximate percentage

value) indicated two activities and 29.5% reported only one activity.

DISCUSSION

According to the demographic composition of the participants, 67.8% were females, 32.2% were males. When examining the responses, it was determined that washing-up



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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(TRADEMARK)

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ranked first among the activities in which hands and wrists were frequently used, with a percentage of 22.1%, handiwork/knitting ranked second with 16.7%, while 74.6% of the participants indicated the “other” option, with the response of cleaning tasks. The study by Umay et al. (2011) conducted with 119 participants resulted in higher percentages among the activities performed by housewives (70.6% of housewives reported washing-up activities and 67% handiwork activities) than those determined in the current study. In another study (2015) conducted by Biçer et al. involving the participation of 45 housewives presenting with complaints of numbness, tingling, pain and loss of strength in the hands found the frequency in which cleaning was conducted to be 4.16 ± 2.3 days within a given week. Lastly, the results of a study (2013) carried out by Aydemir et al. examining the records of 180 patients presenting with a pre-diagnosis of carpal tunnel syndrome (CTS), the findings related to housewives and farmers showed their hand-wrist disorders to be “severe”, and similar to the current study, handicraft and cleaning were found to be significant risk factors for hand-wrist disorders.

The participants in the current study gave a total of 553 responses to the question addressing hand and wrist complaints. Among these responses, it was determined that 27.8%

of the complaints involved wrist pain, 14.5% quick exhaustion of fingers, 13% numbness in the fingers and 4.4% immobility of the fingers. The study by Biçer et al., conducted (2015) with the participation of 45 females and 77 hands, resulted in higher percentages of certain complaints than those presented in the current study. Specifically, 72.7% of the participants in Bicer’s study had complaints of numbness, while 19.5% had complaints of both numbness and pain. In the study (2001) made by Pascarelli and Hsu involving 485 participants, including computer users, musicians and other professionals, a large majority of the participants reported fluctuating, multiple complaints, 37% of which involved hand pain, 29% wrist pain and 15% finger pain. The current study has shown that while 60.5% of the females and 50.4% of the males had hand and wrist disorders, the diversity of disorders was not high enough to be statistically significant and diagnostic status varied according to gender ($p > 0.05$). Unlike the current study, the study carried out by Violante et al. (2007) with the participation of 2092 people indicated that there was a strong relationship between work requiring tight grasping or repetitive actions and gender. Leveille et al.’s (2005) study involving the participation of 1062 people demonstrated that females experienced more pain in one or more body parts and that this pain occurred more commonly in the females than in the males. Moreover,



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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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a study performed by Solidaki et al. (2010) with the participation of 596 people indicated that localized musculoskeletal pain, particularly back and neck pain, was common in both genders, and that neck, shoulder and hand/wrist pain was more commonly observed in females than in males.

The current study found there to be a statistically significant relationship between the number of daily activities performed and the hand and wrist complaints of the participants ($p < 0.05$). A study conducted by Bonfiglioli et al. (2007) with the participation of 396 people showed that CTS symptoms were more commonly observed in full-time employees than in part-time ones. Furthermore, a study performed by Tanaka et al. (2001) found a relationship between the repetitive bending and flexing movements of hands and wrists and significant tendinitis. In a study carried out with engineering department students, (2004) finger, hand and wrist pain were quite frequently observed. The same study found a relationship between years of computer use, the weekly use of computers and pain (Schlossberg et al., 2004: 297-303).

CONCLUSION

As a result of the research, it was determined that washing-up ranked first among the activities in which hands and wrists were frequently used and that a majority of the complaints

involved wrist pain, rapid onset of tiredness in the fingers and they finger numbness. Additionally, it was found that the complaints of the females differed from those of the males, that the degree of difference was not high enough to be statistically significant and that the diagnostic status of the complaints varied according to gender.

Hand and wrist disorders commonly occur as part of daily life activities, these disorders can reach a level of discomfort and general quality of life can be affected. Taking the gender differences of the individuals into consideration, various education programs and health services should be provided to create greater awareness about hand-wrist disorders.

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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: C10-J23-L82-M30 ID:305 K:391

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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COMPARING SOCIAL PHYSIQUE ANXIETY AND PHYSICAL SELF-
PERCEPTION OF UNIVERSITY STUDENTS REGARDING EXERCISE
PARTICIPATION ¹DÜZENLİ OLARAK EGZERSİZE KATILAN VE KATILMAYAN
ÜNİVERSİTE ÖĞRENCİLERİNİN SOSYAL FİZİK KAYGI VE KENDİNİ
FİZİKSEL ALGILAMA PUANLARININ KARŞILAŞTIRILMASI*Hakan KOLAYIŞ¹, İhsan SARI¹, Nurullah ÇELİK²**¹⁻² Sakarya University, Faculty of Sports Sciences, Sakarya / Turkey*

Öz: Spor bilimleri alanındaki birçok araştırmada, egzersize katılımın fizyolojik ve psikolojik etkileri farklı örneklem grupları ile ele alınmıştır. Bu konuda yapılan araştırmalar egzersize katılımın farklı birçok etkisini ortaya koyması açısından önemlidir. Bu bağlamda, bu araştırmanın amacı düzenli olarak egzersize katılan ve katılmayan üniversite öğrencilerinin sosyal fizik kaygı ve kendini fiziksel algılama puanlarının karşılaştırılmasıdır. Düzenli olarak egzersize katılan ve katılmayan toplam 626 üniversite öğrencisi (Yaş: 21.44 ± 2.19) gönüllü olarak araştırmaya katılmıştır. Veri toplama aracı olarak Sosyal Fizik Kaygı Envanteri ve Kendini Fiziksel Algılama Envanteri kullanılmıştır. Normal dağılımı test etmek için Kolmogorov-Smirnov Testi kullanılmış ve verinin normal dağılım göstermediği belirlenmiştir. Bu nedenle iki grubun karşılaştırılması için Mann-Whitney U testi kullanılmıştır. Araştırma sonuçlarına göre düzenli olarak egzersize katılan grup ile düzenli olarak egzersize katılmayan grup arasında sosyal fizik kaygı ve alt boyutları açısından anlamlı bir fark bulunmamıştır. Öte yandan, düzenli olarak egzersize katılan grubun istatistiksel olarak anlamlı olarak daha yüksek spor yeteneği, fiziksel kondisyon ve kuvvet puanına sahip olduğu belirlenmiştir.

Anahtar Kelimeler: Kendini Fiziksel Algılama, Sosyal Fizik Kaygı, Egzersiz

Abstract: Physiological and psychological impacts of exercise have been a matter of scientific studies and those impacts have been put forward in many ways with the studies done in different sampling groups. Studies to be done in this field are important for determining the various functions of exercise on individuals in different sampling groups. The purpose of this research was to investigate whether the levels of Social Physique Anxiety and Physical Self-Perception of university students differ according to exercise participation. The study was composed of 626 student volunteers (\bar{X} age: 21.44 ± 2.19). The Social Physique Anxiety Scale and The Physical Self-Perception Profile Inventory were completed by the participants. The Kolmogorov-Smirnov Test was used to detect whether the data showed a normal distribution or not. It was found that there was not a normal distribution in the data. For this reason, the non-parametric Mann-Whitney U test was used to compare experimental and control groups. It was found that exercise participation had no significant effect on Social Physique Anxiety and its sub-dimensions for the sampling group of this research. On the other hand, exercising had a positive effect on sport ability, physical condition and strength.

Key Words: Physical Self-Perception, Social Physique Anxiety, Exercise

Doi: 10.17363/SSTB.20162124006

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SSTB

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I30-M12-M19-M30-M31-M54 ID:313 K:402

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Behavioural changes in physical activity have become a subject of psychology and social psychologists have supported the need to find out the elements and structures that cause and specify these changes (Hagger et al., 2011: 1299-1300). Self- perceptions of individuals related to physical contexts, including social physique anxiety (SPA), are associated with their entire evaluative perception of their self in physical contexts, known as Physical Self Concept (PSC) (Hagger et al., 2010: 305). Hart et al. (1989) indicated that SPA is a sub-type of social anxiety. In this context, SPA arises from the prospect of interpersonal evaluation of an individual's physique. According to Crawford and Eklund (1994), anxiety related to the perceived social evaluation of one's body or physical appearance is defined as SPA. Complying with others' perception gives rise to concerns, particularly about behaving according to situational norms, being worried about social approval or disapproval, being concerned about others' perceptions and evaluations or feeling anxious about others' evaluation of one's own physical appearance (Çağlar et al., 2010: 742).

People choose to exercise for different reasons ranging from achieving or sustaining physical appearance to less visual concerns like health and obtaining a desired social identity. People are believed to obtain recog-

nition, rewards and attention thanks to being athletic. According to Leary (1992), individuals take part in exercise for personal or social concerns (Brown, 2002: 220).

Researches showed that the physical self is an important psychological outcome, correlate and determinant of participation in physical activity (e.g. Fox, 1997; McAuley et al., 2002; Schneider et al., 2008; Hagger et al., 2010). Physical self-perception (PSP) is a form of self-concept that is likely to be affected by participation in physical activity. It is possible to say that components of one's PSC have a positive relation with physical activity and sport-related behaviours. For example, Raudsepp, Liblik and Hannus (2002) concluded that physical self-perceptions are significant correlates of physical activity and fitness. Likewise, studies conducted by Sonstroem et al. (1992), Page et al. (1993) and Aşçı, (2005) mentioned an increase in physical activity participation if an individual has more favourable perceptions of physical capacity. With regard to gender, males were found to have more favourable PSP compared to females. Particularly in certain self-concept domains such as perceived sport competence, physical attractiveness, physical condition and strength and entire physical self-appraisal, males were reported to have more favourable self-perceptions than females (Arazi & Hosseini, 2013: 11).



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GEL CODE: I30-M12-M19-M30-M31-M54 ID:313 K:402

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Previous studies such as Hagger et al., 2010; Hagger et al., 2007 and Kowalski et al., 2001 showed that SPA is linked with self-presentational perceptions such as self-esteem and self-perception. In Leary and Kowalski's (1990) model explaining the link between SPA and the concern of an individual with negative presentation of the physical self in evaluative contexts, people with a low physical self-concept are expected to have an increase in SPA. Therefore, researchers have pointed out that PSC has a negative relation with SPA (e.g. Hagger et al., 2010; Martin et al., 1997).

The theoretical prediction mentioned about the effects of physical activity on individual's subsequent behaviour and self-presentational outcomes posits an effect on perceptions of individuals' own capabilities and self-efficacy. This approach points out that engaging in physical activity is a self-presentational strategy resulting in the improvement of perceptions regarding individual competence and a corresponding decrease in the discomfort associated with perceived negative physical evaluation such as SPA (McAuley et al., 2002: 223). In the light of the explanations stated above, the purpose of this research was to investigate whether the levels of SPA and PSP of university students differ in regards to exercise participation.

METHOD

Participants

A total of 626 students consisting of 353 male ($X_{age}: 21.76 \pm 2.30$) and 273 female ($X_{age}: 21.04 \pm 1.97$) participated in the study voluntarily. Of these students, 330 ($X_{age}: 21.77 \pm 2.17$) exercised regularly, while 296 ($X_{age}: 21.08 \pm 2.15$) did not.

Measures

"The Social Physique Anxiety Scale" (SPAS), which was created by Hart et al. (1989) and adopted into Turkish by Mülazimoğlu and Aşçı (2006), consists of 12 items and two subscales (Feeling of Discomfort and Expectation of Negative Evaluation). The items elicited responses on a five point Likert scale: (1) not at all (2) slightly, (3) moderately, (4) very and (5) extremely (Hagger et al., 2010: 308). The lowest score is 12 while the highest score is 60. As the scores obtained from the scale increase, so does one's anxiety over one's appearance.

The Physical Self-Perception Profile (PSPP) Inventory was designed by Fox (1990) and adopted into Turkish by Aşçı et al. (1995). The scale measures individuals' beliefs about their physical capabilities. The PSPP contains 30 items that form five dimensions. These dimensions are: general physical self-worth, sports competence, physical condition, at-



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

tractive body and strength and musculature (Ransdell et al., 2001: 121). The inventory has expressions for each item defining two types of people. Participants are required to choose one of these two options they are most like and the degree to which they resemble this type. They choose expressions like “Exactly true for me” or “rather true for me” for grading this similarity. The answers are scored from one (low physical self-perception) to four (high physical self-perception) (Gençay and Akkoyunlu, 2012: 318). Each sub-dimension of PSPP has six items, therefore the overall scores range from 6 to 24.

Procedures

The purpose of the study was explained and the principle of voluntary participation in the study was stated to the participants. Students were contacted by the researchers in face-to-face interactions in fitness centers. The researchers explained the aim of the research and requested the athletes to take part in the research. While the students in the regular exercise group were chosen among the students who exercise at least one year with regularity,

the control group consisted of students who do not regularly exercise.

Data Analysis

In the analysis of data, the SPSS 17 packet program was used. Significance level was determined to be 0.05. The Kolmogorov-Smirnov Test was used to detect whether the data show a normal distribution or not. This test found that there was not a normal distribution in the data. For this reason, one of the non-parametric tests, the Mann-Whitney U test, was used to compare the groups.

RESULTS

Results showed that the mean score for the individuals who exercise regularly for feeling of discomfort was 11.71 ± 3.76 , for expectation of negative evaluation, 17.04 ± 5.48 and for SPA, 28.75 ± 7.92 (Table 1). As for the individuals who do not regularly exercise, the mean score for feeling of discomfort was 12.07 ± 3.51 , for expectation of negative evaluation, 17.41 ± 5.71 and for SPA, 29.48 ± 7.82 (Table 1).



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 1. Descriptive Statistics of SPA Regarding the Exercise Participation

State of Exercise Participation		Feeling of Discomfort	Expectation of Negative Evaluation	Social Physique Anxiety
Exercise Regularly	Mean	11.71	17.04	28.75
	N	330	330	330
	Sd.	3.77	5.48	7.92
Not Exercise Regularly	Mean	12.07	17.41	29.48
	N	296	296	296
	Sd.	3.51	5.71	7.82

The mean score for the individuals who regularly exercise competence was 16.87 ± 3.30 , for physical condition, 16.47 ± 3.23 , for body attractiveness, 15.80 ± 2.90 , for general physical self-worth, 16.10 ± 2.83 and for strength, 16.55 ± 3.09 (Table 2). For the individuals

who not do regularly exercise, the mean score for sport competence was 14.85 ± 3.35 , for physical condition, 15.03 ± 3.12 , for body attractiveness, 15.76 ± 2.97 , for general physical self-worth, 15.93 ± 2.85 and for strength, 15.48 ± 3.27 (Table 2).

Table 2. Descriptive Statistics of PSP Regarding Exercise Participation

State of Exercise Participation		Sport Competence	Physical Condition	Body Attractiveness	General Physical Self Worth	Strength
Exercise Regularly	Mean	16.88	16.47	15.81	16.10	16.55
	N	330	330	330	330	330
	Sd.	3.30	3.24	2.91	2.83	3.092
Not Exercise Regularly	Mean	14.85	15.03	15.76	15.94	15.49
	N	296	296	296	296	296
	Sd.	3.35	3.13	2.97	2.86	3.28



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

No significance differences between the two groups were found in “feeling of discomfort about one’s physique” ($U = 45343.50$, $p>0.05$), “the expectation of negative evaluation of one’s physique by others” ($U = 47592.50$, $p>0.05$) or “social physique anxiety” ($U = 45846.00$, $p>0.05$), (Table 3).

ation of one’s physique by others” ($U = 47592.50$, $p>0.05$) or “social physique anxiety” ($U = 45846.00$, $p>0.05$), (Table 3).

Table 3. Comparing SPA in Terms of Exercise Participation

Sub Scales	Status	N	Mean Rank	Sum of Ranks	U	p
Feeling of Discomfort	Exercise regularly	330	302.90	99958.50	45343.50	.12
	Not exercise regularly	296	325.31	96292.50		
	Total	626				
Expectations of Negative Evaluations	Exercise regularly	330	309.72	102207.50	47592.50	.58
	Not exercise regularly	296	317.71	94043.50		
	Total	626				
Social Physique Anxiety	Exercise regularly	330	304.43	100461.00	45846.00	.18
	Not exercise regularly	296	323.61	95790.00		
	Total	626				

According to the results of the Mann-Whitney U test of the PSPP, the “body attractiveness” ($U = 47811.50$, $p>0.05$) and “general physical self-worth” ($U = 46949.50$, $p>0.05$) scores did not significantly differ between the students who regularly exercise and those who do not. However, there was a significant difference in “sport competence” ($U = 32075.00$, $p<0.05$), “physical condition” ($U = 36242.50$, $p<0.05$) and “strength” sub-dimensions of the PSPP ($U = 38830.50$, $p<0.05$) which was in favour of those who participated in regular exercise (Table 4).

cant difference in “sport competence” ($U = 32075.00$, $p<0.05$), “physical condition” ($U = 36242.50$, $p<0.05$) and “strength” sub-dimensions of the PSPP ($U = 38830.50$, $p<0.05$) which was in favour of those who participated in regular exercise (Table 4).



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 4. Comparing PSP in Terms of Exercise Participation

Sub Scales	Status	N	Mean Rank	Sum of Ranks	U	p
Sport Ability	Exercise regularly	330	364.30	120220.00	32075.00	.00*
	Not exercise regularly	296	256.86	76031.00		
	Total	626				
Physical Condition	Exercise regularly	330	351.67	116052.50	36242.50	.00*
	Not Exercise regularly	296	270.94	80198.50		
	Total	626				
Body Attractiveness	Exercise regularly	330	316.62	104483.50	47811.50	.65
	Not exercise regularly	296	310.03	91767.50		
	Total	626				
General Physical Self Worth	Exercise regularly	330	319.23	105345.50	46949.50	.40
	Not exercise regularly	296	307.11	90905.50		
	Total	626				
Strength	Exercise regularly	330	343.83	113464.50	38830.50	.00*
	Not exercise regularly	296	279.68	82786.50		
	Total	626				

*p<0.05

DISCUSSION

The findings of this research showed that doing regular exercise partly contributed to PSP of university students, whereas there was not any significant change in SPA scores. There was not any significant difference for body attractiveness and general physical self-worth

in regards to doing regular exercise. In contrast, regular exercise appeared to enhance university students' perception of their sport competence, physical condition and strength.

Lindwall and Lindgren (2005) conducted experimental research in order to investigate the effectiveness of an exercise intervention programme on PSP and SPA in a group of adolescent Swedes who did not do regular



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

physical activity. The participants in the experimental group joined the activities twice a week; the intervention consisted of exercises and discussions that lasted around one hour. Although Lindwall and Lindgren's research (2005) concluded that positive effects of the exercise intervention programme on the physical self were unclear, their overall results supported the positive effect of exercise on PSP and SPA.

In another research study that aimed to investigate the impact of a nine-month physical activity intervention program on physical self-concept among sedentary adolescent females, the authors concluded that the physical activity intervention did not lead to enhanced physical self-concept among the participants (Schneider et al., 2008: 10). It was stated in another study that practising six weeks of aerobic dance enhanced body attitudes and physical self-perceptions. This research indicated positive psychological contribution of aerobic dance activities for adolescents who have a poor image of themselves (Burgess et al., 2006: 57).

CONCLUSION

It can be said that not many studies have examined the relationship between participation in physical activities, SPA and PSP. Gökçe et al. (2010) compared SPA of individuals who do and do not do physical activity and concluded

that individuals who regularly exercise have significantly lower SPA scores. Similarly, Baştuğ et al. (2011) examined the effect of eight weeks of aerobic exercises on various variables and concluded that this exercise program contributed to increased perception of their appearance and self-confidence. This research showed the importance of physical activities for individuals to be happier with their physical appearance.

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I30-M12-M19-M30-M31-M54 ID:313 K:402

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I30-M12-M19-M30-M31-M54 ID:313 K:402

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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(TRADEMARK)

(2015/04315- 2015-GE-18972)

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AUTHOR'S NOTE: This paper was presented at the 13th International Sports Science Congress, 7-9 November 2014.

THE EFFECT OF SPORT MOTIVATION ON PERCEPTION OF RISK
AND UNCERTAINTY ¹

SPORDA GÜDÜLENMENİN RİSK VE BELİRSİZLİK ALGISINA ETKİSİ

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Öz: Hızla değişen dünyamızda örgütler, girişimci, belirsizliğe tolerans gösterebilen, risk alan ve yeniliklere açık bireylere ihtiyaç duymaktadır. Yapılan araştırmalarda, spor yapan bireylerin risk alma düzeyleri değerlendirildiğinde spor yapmayan bireylere oranla daha yüksek puanlara sahip olduğu anlaşılmıştır. Yapılan araştırmada sporda içsel güdülenmenin bireylerin risk ve belirsizlik algısına etkisi ile aralarındaki ilişki araştırılmıştır. Araştırmada basit tesadüfi örnekleme yöntemiyle belirlenen Erciyes Üniversitesi Beden Eğitimi ve Spor Yüksekokulu öğrencilerinden günlük hayatları içinde spora yer veren 218 kişiye yüz yüze görüşme yöntemiyle anket uygulanmıştır. Araştırma modeline göre geliştirilen hipotezler uygun istatistiksel yöntemlerle analiz edilmiştir. Yapılan çalışmada aşağıda belirtilen sonuçlara ulaşılmıştır: Sporda içsel boyutta güdülenen bireylerin risk ve belirsizlik algı düzeyleri arasında pozitif, doğrusal ve orta düzeyde bir ilişki bulunmaktadır. Sporda içsel güdülenme bireylerin risk ve belirsizlik algısı üzerinde etkilidir.

Anahtar Kelimeler: Motivasyon, Risk, Belirsizlik, Risk Algısı

Abstract: In our rapidly changing world, organizations need individuals who are entrepreneur and open to innovations, can tolerate uncertainty and take risks. In conducted studies, it is concluded that, as risk taking levels of individuals who actively are in sports are evaluated, they have higher scores of risk taking than individuals who do not do sports have. The effect of sport motivation on individuals' perception of risk and uncertainty and the relationship between them were researched in the research. Face to face survey was administered to 218 people, who involve sports in their daily lives, selected by simple random sampling method among the students of School of Physical Education and Sports of Erciyes University. Hypotheses which have been developed according to research model were analyzed by appropriate statistical methods. Below are the results of the research conducted: There is a positive, linear and moderate relationship between perceived levels of risk and uncertainty in individuals who are intrinsically motivated in sports. Intrinsic motivation in sports is influential on individuals' risk and uncertainty perceptions.

Key Words: Motivation, Risk, Uncertainty, Risk Perception

Doi: 10.17363/SSTB.20162124010

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: A23-I15-J11-J64-M5-M10-M12-M19-M31-P36 ID:310 K:398

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

The term motivation comes from the word “movere” and means to move. It has many different definitions. Wang (2004) as “complete internal mechanisms and external stimulants which direct behaviors” (Wang, 2004: 517); Franken (1994) as “stimulation, way and continuation of behavior” (Başer, 1998; Franken, 1994; Erdem, 2008: 7) and Eren (2015) as “individuals’ behaving and striving intentionally for achieving a goal”. Although there are a number of different definitions in literature, they generally have a common point which is an internal desire’s prompting individuals and directing their behaviors. A number of theories have been suggested about motivation. According to one of these theories, namely, Self Determination Theory by Deci & Ryan (2000), motives have a multidimensional structure and emerge in the ways intrinsic motivation, extrinsic motivation and amotivation to various extent (Deci & Ryan, 2000: 231). Extrinsic motivation emerges through other humans with positive and negative supports (Danışman, 2011: 11). It is utterance of environmental press and desires. Amotivation describes lack of an intrinsic motive for behaving and as a result, non-formation of behavior (Mumcu, 2011: 40). Amotivated individuals cannot be motivated both intrinsically and extrinsically (Deci & Ryan, 2000: 232). In intrinsic motivation, the source is individual’s

behaviors. External factors do not affect continuation of these behaviors. Thereafter, Vallerand and his friends suggested that intrinsic motivation has three subcategories which are knowledge, accomplishment and experiencing stimulation (Vallerand and Losier, 1999; Vallerand et al, 1987; Vallerand and Bissonnette, 1992: 601). The highest end of Self Determination Theory stems from intrinsic motivation. Individuals’ behaviors in such a situation are intrinsic behaviors which are independent of physical rewards or external press (Ersöz et al, 2012: 18). Intrinsic motivation means individuals’ behaviors to participate in an activity with their free will without another person or thing (Kazak Çetinkalp, 2009: 12). According to Cox (1998), intrinsic motivation is the same with motive to accomplish. Researchers indicate that intrinsic motivation causes sportsmanship and motivation at higher degrees for beginners in sports (Bakker et al, 1990; Wang, 2004: 518). Perception is the process in which individuals choose information input, organize it and interpret it in order to create a meaningful world image (Kotler et al, 2000). Is there a common point between perception levels of intrinsically motivated individuals in sports and their personalities? How do they act against risk and uncertainties? To answer these questions, the term risk must be primarily explained.



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(TRADEMARK)

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According to Willet (1971), risk is uncertainty of an undesired event to occur. It can also be defined as the probability of an undesired event in the future (Willet, 1971: 471). Risk is the uncertainty related to possible effects after performing decisions. This uncertainty means that outcomes of decisions may create disappointment (Sitkin and Paolo, 1992: 26). The terms risk and uncertainty are related but not the same terms. Risk is the rate of probability of an event whereas uncertainty is the expectation of anything independently of any probability and it causes worry. It has both negative and positive components. While negative components of uncertainty contain several risks, positive ones contain opportunities (Yılmaz, 2005: 28). Tolerance for uncertainty which is one of the most important characteristics of entrepreneur individuals can be defined as the ability to react positively to uncertain situations (Erdem, 2001: 48). According to Furedi (2001), risk is associated with how individuals or society describe themselves in changing and coping with the future. Risk is commonly known as a dangerous term and indicates the events expected to occur in the future but not certain (Özer and Gülpınar, 2005: 50). However, risk can also contain opportunity besides representing an undesired event and danger. Opportunity is the probability of occurrence of something helpful to achieve goals. Opportunities help to create and protect values and they create

benefits. Risk and benefit are related to each other (Finucane et al, 2000: 8). In the world which changes rapidly and shows a dynamic structure, tolerance for uncertainty, risk taking and innovativeness are among the features which organizations need in entrepreneurs (Tabak et al, 2010). In conducted studies, it is concluded that, as risk taking levels of individuals who actively are in sports are evaluated, they have higher scores of risk taking than individuals who do not do sports have (Mountaineers, 1975; Slinger & Rudestam, 1997; Aktaş, & Erhan, 2015: 41).

In literature review, it is seen that, in the research on sports and athletes, the term risk is approached as an undesired concept which affects athletes' performances negatively; sport organizations and athletes will be successful as they overcome risks. Undoubtedly, risk naturally contains negative, dangerous and undesired circumstances within itself. However, this loop is also within the concepts of opportunity and success. Risk on reasonable scales is one of the fundamental factors for success especially in business.

The concepts risk and motivation have been mentioned separately in various studies but they have not been in the same frame so much. In the research, the focus will be on the two concepts and the relationship between perception of risk and uncertainty of in-



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

dividuals' intrinsically motivated in sports in their daily lives will be investigated.

Hypotheses which have been developed according to the purpose of the research in accordance with those stated above are as follows;

H1: There is a correlation between intrinsic motivation in sports and individuals' perception of risk and uncertainty.

H2: Intrinsic motivation in sports has an effect on individuals' perception of risk and uncertainty.

MATERIAL and METHODS

The Purpose of the Research

In the conducted research, it was aimed to investigate the effect of sport motivation on perception of risk and uncertainty and whether there is a relationship between them.

The Scope and the Method of the Research

The sample of the research consist of the students from different departments of School of Physical Education and Sports of Erciyes University in 2015-2016 Academic Year. The sample was chosen by sample random sampling among the students of this school who involve sports in their daily lives and 218 students (97 females, 121 males) in total participate in the research.

Data Collection

In the research, descriptive research method and survey as the data collection tool which take part in quantitative research method are used. The survey is formed by three section. Personality and demographic characteristics in the first section, perception of risk and uncertainty in the second section and attitudes towards sport motivation in the third section are investigated.

Sport Motivation Scale (SMS), which was originally developed by Pelletier et al. (1995) according to Deci & Ryan's (1985) Self Development Theory and whose preliminary examinations were made by Toros (2000) in our country and of which Kazak (2004) made validity and reliability studies, are used in the research in order to explain individuals' participation in sports, in which ways they are motivated to maintain this participation and which motives have the most influence on formation of behaviors. The scale is used only in intrinsic motivation because of its relation with the topic and not used in extrinsic motivation and amotivation. Participants were asked 12 questions in five point Likert scale (1= Never; 5= Often). Four of these questions form the subscale experiencing stimulation and 8 form the subscales knowledge and accomplishment. Additionally, 6-question survey which was used in the article "*Risk and Uncertainty Perceptions of Small Business*



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(TRADEMARK)

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Entrepreneurship: A Case From Bursa” by Bozkurt and Baştürk (2003) over “Perception of Risk and Uncertainty” was applied. Participants were asked 6 questions in five point Likert scale (1= Never; 5= Often) about risk and uncertainty tolerances. First three of these are negative questions related to risk and uncertainty and last three are positive ones related to risk and uncertainty.

Analysis of the Data

SPSS 20.0 package program was used in the analysis. In conducted reliability analysis, Cronbach’s Alpha internal consistency coefficient for the subscales knowledge and accomplishment of sport motivation is found as 0.89; 0.76 for the subscale experiencing

stimulation and 0.92 for the complete of the scale intrinsic motivation.

Factor analysis was used for the questions of risk and uncertainty tolerances and as a result of the analysis, two sub factors. KMO rate was found as 0.68. Cronbach’s Alpha internal consistency coefficients of the factors were found as 0.55 and 0.70 and analyses were maintained through the factor with higher internal consistency coefficient.

(Table, 1). Obtained data was analyzed by using frequency analysis, T-test, crosstabs, Chi-square, One-way Anova and Tukey tests. Results were evaluated at 0.05 significance level.

Table 1. Factor Analysis, Chi-Square and Cronbach’s Alpha Values of Perception of Risk and Uncertainty

	Chi-Square	Factor1	Factor2	Cronbach’s Alpha
Risk 1	,118			
Risk 2	,000		,824	0,55
Risk 3	,000		,834	
Risk 4	,000	,793		0,65
Risk 5	,000	,814		
Risk 6	,000	,761		0,70

FINDINGS

Findings below were obtained as a result of conducted in the research:



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(TRADEMARK)

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Table 2. Crosstab by Age and Gender

		Gender		Total
		Female	Male	
Age	Age 17-20	23	18	41
	Age 21-24	61	68	129
	Age 25-28	13	35	48
Total		97	121	218

Table 3. Crosstab by Age and Grade

		Grade				Total
		1 st Grade	2 nd Grade	3 rd Grade	4 th Grade	
Age	Age 17-20	15	21	3	2	41
	Age 21-24	8	46	51	24	129
	Age 25-28	2	15	15	16	48
Total		25	82	69	42	218

Table 4. Frequency Analysis of Personality and Demographic Characteristics

Parameters				Frequency			Percent		
Parameters				Frequency			Percent		
Gender	Female	97	44,5	Grade	1 st Grade	25	11,5		
	Male	121	55,5		2 nd Grade	82	37,6		
	Total	218	100,0		3 rd Grade	69	31,7		
Age	Age 17-20	41	18,8	Department	4 th Grade	42	19,3		
	Age 21-24	129	59,2		Total	218	100,0		
	Age 25-28	48	22,0		Teaching	45	20,6		
	Total	218	100.0		Coaching	78	35,8		
					Recreation	37	17,0		
					Sport Management	58	26,6		
					Total	218	100,0		



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As tables 1-4 are examined, these findings were obtained. N=218 and there are 97 female participants and 121 male participants. 59.2% of participants are 68 males and 61 females in 21-24 age group; 22.0% of participants are 35 males and 13 females in 25-28 age group; 18.8% of participants are 18 males and 23 females in 17-20 age group.

37.6% 2nd grade, 31.7% 3rd grade, 19.3% 4th grade, 11.5% 1st grade. Participants are distributed among 2nd and 3rd grades. Students are receiving their educations in the department of coaching (35.8%), in sport management (26.6%), in physical education and sport teaching (20.6%) and in recreation (17.0%).

Table 5. Correlation Analysis of Sport Motivation and Perception of Risk and Uncertainty

		Sport Motivation	Experiencing Stimulation	Knowledge and Accomplishment
Perception of Risk and Uncertainty	Pearson Correlation	,547**	,490**	,545**
	Sig. (2-tailed)	,000	,000	,000
	N	218	218	218

Whether there is a relationship between intrinsic relationship in sports and individuals' perception of risk and uncertainty was examined by correlation analysis method along with whole of sport motivation scale and its subscales (Table 5). Correlation coefficient is a value which changes between -1 and +1 and measure the extent of linear relationship between two variables. A value close to -1 means a strong negative linear correlation and a value close to +1 indicates a strong positive linear correlation (Altunışık et al., 2010). In the analysis, these were determined, $r=0.547$, $r=0.490$, $r=0.545$. Therefore, these were concluded that there is a positive, moderate and

linear relationship between attitudes towards intrinsic motivation in sports and individuals' perception of risk and uncertainty, there is a positive, moderate and linear relationship between intrinsic motivation and individuals' perception of risk and uncertainty and between the subscale experiencing stimulation and the subscales knowledge and accomplishment. Thus, the hypothesis H1: "There is a correlation between intrinsic motivation in sports and individuals' perception of risk and uncertainty." is accepted.



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(TRADEMARK)

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Table 6. Regression Analysis Measuring the Effect of Sport Motivation on Perception of Risk and Uncertainty

Variables	B	t	Sig.	R	R ²	F	Sig.F	Result
Fixed	1,413	5,335	,000					
Sport Motivation	,611	9,592	,000					Accepted
				,547	,299	92,007	,000	
Regression Model $Y1_{\text{(perception of risk an uncertainty)}} = 1,413 + 0,611_{\text{(Sport Motivation)}}$								

As seen in table 6 according to the results of the regression analysis done in order to find out whether there is any effect of intrinsic motivation on in sports on individuals' perception of risk and uncertainty, it has been seen detected that intrinsic motivation in sports affects has effect on individuals' perception of risk and uncertainty ($p=0.000$ and $p<0.05$) and the regression model which expresses this effect has been developed as $Y1_{\text{(perception of risk and uncertainty)}} = 1,413 + 0,611_{\text{(Sport Motivation)}}$

Therefore, the hypothesis H2: "Intrinsic motivation in sports affects has effect on individuals' perception of risk and uncertainty." is accepted affects individuals' perception of risk and uncertainty.

DISCUSSION and RESULTS

The results below have been gained in the research which was conducted by participation of 218 students in total chosen by sample random sampling method among the students of School of Physical Education and Sports of Erciyes University who involve sports in

their daily lives and which was conducted to investigate whether there is a relationship between individuals' attitudes towards their perceptions of risk and uncertainty in their daily lives, who are intrinsically motivated in sports;

59.2% of participants are 68 males and 61 females in 21-24 age group;. 22.0% of participants are 35 men and 13 females in 25-28 age group; 18.8% of participants are 18 males and 23 females in 17-20 age group. 37.6% 2nd grade, 31.7% 3rd grade, 19.3% 4th grade, 11.5% 1st grade. Participants are distributed among 2nd and 3rd grades. Students are receiving their educations in the department of coaching (35.8%), in sport management (26.6%), in physical education and sport teaching (20.6%) and in recreation (17.0%).

Whether there is a relationship between intrinsic relationship in sports and individuals' perception of risk and uncertainty was examined by correlation analysis method along with whole of sport motivation scale and its



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subscales. In the analysis, these were determined, $r=0.547$, $r=0.490$, $r=0.545$. Therefore, these were concluded that there is a positive, moderate and linear relationship between attitudes towards intrinsic motivation in sports and individuals' perception of risk and uncertainty, there is a positive, moderate and linear relationship between intrinsic motivation and individuals' perception of risk and uncertainty and between the subscale experiencing stimulation and the subscales knowledge and accomplishment. Thus, the hypothesis H1: "There is a correlation between intrinsic motivation in sports and individuals' perception of risk and uncertainty." is accepted.

As seen in Table VI, according to the results of the regression analysis done in order to find out whether there is any effect of intrinsic motivation on in sports on individuals' perception of risk and uncertainty, it has been detected that intrinsic motivation in sports affects individuals' perception of risk and uncertainty ($p=0.000$ and $p<0.05$) and the regression model which expresses this effect has been developed as $Y1_{(\text{perception of risk and uncertainty})} = 1,413 + 0,611_{(\text{Sport Motivation})}$. Therefore, the hypothesis H2: "Intrinsic motivation in sports affects has effect on individuals' perception of risk and uncertainty." is accepted.

According to Cox (1998), intrinsic motivation is the same with motive to accomplish. There is no close relationship between accomp-

lishment and tolerance for uncertainty and risk taking. Tolerance for uncertainty which is one of the most important characteristics of entrepreneur individuals can be defined as the ability to react positively to uncertain situations (Erdem, 2001, p.58). According to Tabak et al. (2010), individuals with focus of internal audit have higher tendency to tolerance for uncertainty. Individuals with focus of internal audit have the belief that they can affect the events occurring around them. Therefore, these individuals gives more importance to success or failure (Tabak et al., 2010: 159). Basım and Şeşen (2007), Spector and O'connell (1994) reached similar results in their works. This verifies our hypotheses indirectly (Basım and Şeşen 2007: 117) Also, in the studies done by Slanger and Rudestam (1997) it was concluded that, as risk taking levels of individuals who actively are in sports are evaluated, they have higher scores of risk taking than individuals who do not do sports have (Slanger and Rudestam, 1997: 368) This conclusion is similar to our study. The concepts risk and motivation have been mentioned separately in various studies but they have not been in the same frame so much. This research is also important because of relating and evaluating these two concepts in the same frame. It was concluded that there is a positive, moderate and linear correlation between individuals' perception of risk and uncertainty who are motivated intrinsically



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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and intrinsic motivation in sports with its subscales affects individuals' perception of risk and uncertainty.

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: A23-I15-J11-J64-M5-M10-M12-M19-M31-P36 ID:310 K:398

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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International Refereed Academic Journal of Sports, Health and Medical Sciences

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(TRADEMARK)

(2015/04315- 2015-GE-18972)

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INVESTIGATION OF THE RELATIONSHIP OF HAPPINESS, LEISURE ATTITUDES AND LIFE SATISFACTION LEVELS OF INDIVIDUALS WHO JOIN RECREATIVE DANCING ACTIVITIES ¹

REKREATİF DANS AKTİVİTELERİNE KATILAN BİREYLERİN MUTLULUK, BOŞ ZAMAN TUTUMU VE YAŞAM TATMİNİ DÜZEYLERİNİN VE ARALARINDAKİ İLİŞKİNİN İNCELENMESİ

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Öz: Bu araştırma rekreatif etkinlik olarak dans faaliyetlerine katılan bireylerin mutluluk, boş zaman tutumu ve yaşam tatmini düzeylerinin bazı değişkenlere göre belirlemeyi ve aralarındaki ilişkiyi ortaya koymayı amaçlamıştır. Araştırmaya Ankara ilinde rekreatif olarak dans aktivitelere katılan 302 birey oluşturmaktadır. Araştırmada veri toplama aracı olarak; Diener, Emmons, Larsen ve Griffin (1985) tarafından geliştirilmiş olan ve Türkçeye uyarlaması ve geçerlilik güvenilirliği Durak, Durak ve Gençöz (2010) tarafından yapılan “Yaşam Tatmini Ölçeği (Satisfaction with Life Scale-SWLS)”, Ragheb ve Beard tarafından 1982 yılında geliştirilen ve Türkçeye uyarlaması Akgül ve Gürbüz tarafından yapılan ‘Boş Zaman Tutum Ölçeği’ ve Hills&Argyle (2002) tarafından geliştirilen “Oxford Mutluluk Ölçeği” kullanılmıştır. Verilerin analizinde betimsel istatistikler, t testi ve Tek Yönlü Varyans Analizi (ANOVA) ve korelasyon analizinden yararlanılmıştır. Araştırmanın tüm sonuçları ele alındığında rekreatif dans aktivitelere katılan bireylerin mutluluk düzeylerinin yüksek, boş zaman tutumlarının olumlu ve yaşam tatmini düzeylerinin ise orta düzeyde olduğu, bununla birlikte yaş ilerledikçe ve algılanan gelir seviyesi yükseldikçe mutluluk düzeyi yükselmekte ve boş zaman tutumunun davranışsal alt boyut puanları daha pozitif olmakla birlikte algılanan gelir seviyesi yükseldikçe yaşam tatmini de artmaktadır. Ayrıca rekreatif dans etkinliklerine katılan bireylerin boş zaman tutumları ne düzeyde olumlu olursa mutluluk düzeylerin de doğru orantılı şekilde arttığı söylenebilir.

Anahtar Kelimeler: Mutluluk, Boş Zaman Tutumu, Yaşam Tatmini, Dans

Abstract: This study aims at revealing the relationship of happiness, leisure attitudes and life satisfaction levels of people who join recreative dancing activities. It consists of 302 individuals who join dancing activities recreatively in Ankara. As a data collection tool, “Yaşam Tatmini Ölçeği (Satisfaction with Life Scale-SWLS)” which was created by Diener, Emmons, Larsen and Griffin (1985) and whose validity and reliability and adaptation into Turkish were made by Durak, Durak and Gençöz (2010); “Boş Zaman Tutum Ölçeği (Leisure Scale)” which was created by Ragheb and Beard in 1982 and was adapted into Turkish by Akgül and Gürbüz; “Oxford Mutluluk Ölçeği (Oxford Happiness Scale)” which was created by Hills&Argyle (2002) were used. Descriptive statistics, T-Test and One-Way Analysis of Variables (ANOVA) were used in data analysis. When all the results are considered, it can be seen that the happiness level of people joining dancing activities is high and their leisure attitudes are positive and their life satisfaction level is medium-level. And, it can also be seen that the happiness level increases with the age and perceived income level, behavioral sub-dimensions of leisure attitudes will get positive and life satisfaction will increase with perceived income level. The more positive level individuals’ who join dancing activities have, the more their happiness level will increase in a direct proportion.

Key Words: Happiness, Leisure Attitude, Life Satisfaction, Dance

Doi: 10.17363/SSTB.20162124008

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I12-I30-M12-M14-M54 ID:303 K:390

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Because of the socio-economic and cultural changes that happen in their life, people prefer to spend their leisure with activities which can affect their life in a positive way. This is why people want to be included in a

different social environment, to get away from stress, to adapt themselves to the changing living conditions, to protect and to improve their physical and mental health. In this regard, individuals prefer activities which are both enjoyable and good for their health, and which can increase their satisfaction level. Dancing activities have been very popular recreative activities nowadays, making people happy with esthetical and social features as well as making them physically active (Ayyıldız, 2015: 2-3) According to Hugel and et. al (1999), dance is a special expression of individuals' motor behaviors. Dancing is an art of reflection, description and expression of one's inner world via moves (Cantekin, 2011). Dancing which covers sport, science and art is processing an emotion given by a moving body with physiological progress (Esen, 2012). The fact that time rose in value caused time apart from the work to gain importance; and it contribute to individuals to use their time, their leisure, in an active way. Leisure of people increased because of decreasing working hours, automatisisation, industrialization, vacation with pay. This caused a problem of

spending that leisure. (Süzer, 2000) In this leisure, we can talk about too many different activities, such as daily, weekends, annual leave or longer vacations. Those activities can have a meaning according to individuals' different aims and demands (Karaküçük, 2008: 58). Throughout the history, our social needs were created in a "dance form." This can be seen in primitive regions and primitive tribe's dances. Primitive dances were for different genders and there were no body connections. Having a social relationship with other group members, sense of belonging while moving together, group dynamics in accordance with the common purpose made people take pleasure. It helped people have more self-esteem, avoid from some physiological and social problems or decrease them (Özdemir, 2007). On the other hand, dancing is not only an art activity which you can only spend your leisure with but also a recreative activity which can increase physical activity by nature. So that means that it has an important role in increasing health standards which is defined as not having any diseases or weakness and being in a good mental and social mood; and also it has a huge role in individuals' happiness level and leisure attitudes.

Satisfaction is defined as satisfying impulse, motive, needs and expectation. On the other hand, satisfaction can be related with the differences amongst the expectations which in-



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

dividuals have; the less this difference is, the more this satisfaction level will be (Kovacs, 2007: 29). Life satisfaction is about the comparison of what people expect (their expectation) and what they have (what they possess) (Yerlikaya, 2014). Life satisfaction level contains the whole life of a person and its different perspectives. When it comes to life satisfaction, it is not about only a certain type of satisfaction, it is also about a general one. It is defined as having happiness and a good mood (Vara, 1999). Myers and Diener (1995) told that positive thinking and emotions had a superior position on happiness or being subjectively well; and they could be explained by three variables, which are related with each other but also independent: the relative existence of happiness, absence of emotions and life satisfaction (Kangal, 2013). Psychological well-being is actually important individually and socially because it also increases relationships and productiveness level; it has a positive effect on physical health. (Gündoğar, Gül, Uskun, Demirci, Keçeci, 2007) Individuals who are satisfied with their lives are the ones who have a good level of life satisfaction. The factors which are the reasons for this situation is still an important research subject (Karaman, 2015: 35).

There are too many factors that affect life satisfaction. These are age, sex, education level, income, working hours and social factors.

(Polat, 2014) Furthermore, how people spend their time apart from work, what kind of attitude they have, how satisfied they are with their lives and how happy they are affect their life satisfaction and happiness. When we consider the manner, it is either positive or negative attitude of a person according to an item, a situation or an incident (Karakaş Türker, Turanlı, 2008). Leisure attitude is the attitude that people have while doing activities chosen by themselves in a freely and responsibility-free way. Hence, emotions, ideas and behaviors of people need to be analyzed if we want to have an idea about individuals' attitudes. In this study, it is aimed to identify happiness, leisure attitudes and life satisfaction levels of individuals attending dancing activities and to compare them according to some variables and to show their relationships.

MATERIAL and METHODS

This research is conducted according to the quantitative research model. The scan pattern used in the study is an approach to describe a previous or current situation as is (Karasar, 2008: 77).). The study group consists of 174 female and 128 male, 302 participants who are randomly selected people attending 10 recreative dancing activities in 36 dancing courses in Ankara, and whose average of age is 24.56 ± 6.41 . As a data collection tool, "Yaşam Tatmini Ölçeği (Satisfaction with Life Scale-SWLS)" which was created by



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Diener, Emmons, Larsen and Griffin (1985) and whose validity and reliability and adaptation into Turkish were made by Durak, Durak and Gençöz (2010); “Boş Zaman Tutum Ölçeği (Leisure Scale)” which was created by Ragheb and Beard in 1982 and was adapted into Turkish by Akgül and Gürbüz; “Oxford Mutluluk Ölçeği (Oxford Happiness Scale)” which was created by Hill and Argyle (2002) adapted to Turkish by Doğan and Sapmaz (2012) tarafından geçerlilik ve güvenirlik were used. Life satisfaction scale contains 5 articles and has a single factor. Its parameter of internal consistency is .81. Leisure attitude scale is formed of 36 articles and has cognitive, affective and behavioral features. Its parameter of internal consistency is .97. Oxford Happiness Scale consists of 29 articles and has a single factor. Its parameter of internal consistency is .91. In analyzing the data,

it was seen that distributions had parametric characteristics regarding normality and homogeneity of variables. By showing descriptive statistics in life satisfaction, happiness and leisure attitudes, T-Test and One-Way Analysis of Variables (ANOVA) were used to check if the levels had changed or not. Turkey test was used to find out which group caused differences when there were significant differences in multi variables. Pearson Correlation Analyze was used to find out the relationship of life satisfaction, leisure attitude and happiness level.

FINDINGS

In this chapter, there are findings related with the variables which belong to the individuals' levels of happiness, leisure attitude and life satisfaction and also the findings related with comparisons of different variables.



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Table 1. The Frequency and Percentage Distribution of Demographic Variables of Participants

N=(302)			
	Variable	f	%
Sex	Female	174	57,6
	Male	128	42,4
Age	18<	19	6,3
	18-25	188	62,3
	26-33	75	24,8
	34>	20	6,6
Education Level	Secondary School or less	76	25,2
	High School	192	63,6
	Undergraduate or more	34	11,3
Perceived Income	Low	90	29,8
	Middle	104	34,4
	High and very high	67	22,2

Here are the sex, age, education level and the perceived income level of the participants. We can see that 42.4% of them are male 57.6% are female and their age group is mostly 18-25 which is equal to 62.3% of all participants.

Most of the participants are high school graduates (63,6%) 34,4% of participants say that their perceived income is in middle level, 29,8% say that it is low and 22,2% say that it is high and too high (Table 1).

Table 2. The Arithmetic Average and Standard Deviation Values of Life Satisfaction, Leisure Attitudes and Happiness Scales

N=(302)				
	\bar{x}	ss	Min.	Max.
Happiness Scale	102,43	15,00	52,00	138,00
Leisure Attitude	143,62	19,68	62,00	180,00
Cognitive sub dimension	48,72	7,88	12,00	60,00
Affective sub dimension	48,26	7,23	12,00	60,00
Behavioral sub dimension	48,63	7,61	23,00	60,00
Life Satisfaction	12,40	3,60	5,00	25,00



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Here are the arithmetic average and standard deviation values of life satisfaction, leisure attitudes and happiness scales of participants. It can be seen that the happiness level is high ($102,43 \pm 15,00$), their leisure attitude is positive ($143,62 \pm 19,68$) and life satisfac-

tion is in middle level ($12,40 \pm 3,60$). And we can also see that cognitive, affective and behavioral sub dimensions are almost the same: ($48,72 \pm 7,88$), ($48,26 \pm 7,23$) ($48,63 \pm 7,61$), respectively (Table 2).

Table 3. The Results of T-Test Among Life Satisfaction, Leisure Attitude and Happiness Scales and Sex Variables

	Sex	N	\bar{x}	ss	sd	t	p
Life Satisfaction	Female	174	12,13	3,29	302	-1,516	0,131
	Male	128	12,77	3,98			
Leisure Attitude	Female	174	144,70	17,17	302	1,107	0,269
	Male	128	142,16	22,65			
Cognitive sub dimension	Female	174	49,39	6,66	302	1,708	0,089
	Male	128	47,82	9,24			
Affective sub dimension	Female	174	48,59	6,45	302	0,932	0,352
	Male	128	47,81	8,18			
Behavioral sub dimension	Female	174	46,71	7,28	302	0,213	0,831
	Male	128	46,52	8,06			
Happiness Scale	Female	174	103,15	14,30	302	0,974	0,331
	Male	128	101,45	15,90			

There is no significant difference in leisure attitudes and its sub dimensions and happiness points according to life satisfaction,

leisure attitude and happiness scales and sex variables of participants (Table 3).



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

Tablo 4. The Results of Anova Among Life Satisfaction, Leisure Attitude and Happiness Scales and age Variables

	Age Group	N	\bar{x}	ss	F	p
Life Satisfaction	18 and below	19	11,63	3,72	1,157	0,326
	18-25	188	12,21	3,30		
	26-33	75	12,90	4,31		
	34 and above	20	13,05	3,23		
Leisure Attitude	18 and below	19	147,94	15,06	1,201	0,310
	18-25	188	144,14	17,72		
	26-33	75	140,38	23,90		
	34 and above	20	146,80	23,11		
Cognitive sub dimension	18and below	19	51,00	4,16	1,017	0,386
	18-25	188	48,34	6,94		
	26-33	75	48,65	9,76		
	34 and above	20	50,50	4,16		
Affective sub dimension	18and below	19	51,00	5,94	0,221	0,882
	18-25	188	48,34	6,28		
	26-33	75	48,65	8,74		
	34and above	20	50,50	10,38		
Behavioral sub dimension	18 and below	19	47,68	7,77	4,462	0,00*
	18-25	188	47,50	6,95		
	26-33	75	43,89	8,77		
	34 and above	20	47,70	6,77		
Happiness Scale	18 and below	19	109,52	14,01	8,631	0,00*
	18-25	188	104,48	14,69		
	26-33	75	98,45	14,84		
	34 and above	20	91,30	10,61		

*p<0,05 is statistically significant.

According to ANOVA test which is to analyze life satisfaction, leisure attitude and happiness level regarding their ages, there is no



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

significant difference in leisure attitudes and its cognitive and affective sub dimensions. However a significant difference in leisure in behavioral sub dimension points and happiness points was found ($p<0,05$). So that means, individuals in 18-25-aged group have

more positive leisure attitude in behavioral sub dimensions than individuals in the age of 26-33- And also, individuals who are 34 or above, have a higher level of happiness than individuals who are 18 or below (Table 4).

Table 5. The Results of Anova Among Life Satisfaction, Leisure Attitude and Happiness Scales and Education Level

	Education Level	N	\bar{x}	ss	F	p
Life Satisfaction	Secondary school and below	76	11,93	3,31	1,204	0,301
	High school	192	12,48	3,62		
	Undergraduate and above	34	13,02	4,10		
Leisure Attitude	Secondary school and below	76	142,76	18,67	0,116	0,890
	High school	192	143,80	19,54		
	Undergraduate and above	34	144,52	22,98		
Cognitive sub dimension	Secondary school and below	76	48,14	7,69	0,830	0,437
	High school	192	48,69	7,69		
	Undergraduate and above	34	50,23	9,28		
Affective sub dimension	Secondary school and below	76	47,77	7,90	0,248	0,780
	High school	192	48,39	6,78		
	Undergraduate and above	34	48,64	8,27		
Behavioral sub dimension	Secondary school and below	76	46,84	6,57	0,326	0,722
	High school	192	46,72	7,99		
	Undergraduate and above	34	45,64	7,69		
Happiness Scale	Secondary school and below	76	103,30	14,45	0,367	0,693
	High school	192	102,40	15,28		
	Undergraduate and above	34	100,64	14,86		

According to ANOVA test which is to analyze life satisfaction, leisure attitude and happiness level regarding their education level,

there is no significant difference in leisure attitudes and its sub dimensions (Table 5).



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(TRADEMARK)

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Table 6. The Results of Anova Among Life Satisfaction, Leisure Attitude and Happiness Scales and Perceived Income

		Perceived Income	N	\bar{x}	ss	F	p
Life Satisfaction	Too low		90	12,12	3,35	5,257	0,00*
	Low		104	12,00	2,97		
	Middle		67	12,16	3,83		
	High		41	14,43	4,57		
Leisure Attitude	Too low		90	143,32	16,19	1,647	0,179
	Low	104	146,79	17,18			
	Middle	67	140,86	25,11			
	High		41	140,75	22,00		
Cognitivesub dimension	Too low		90	48,55	5,60	0,032	0,992
	Low		104	48,80	6,92		
	Middle		67	48,68	11,00		
	High		41	48,97	8,60		
Affectivesub dimension	Too low		90	48,10	5,94	0,373	0,772
	Low		104	48,85	6,85		
	Middle		67	47,80	8,51		
	High		41	47,87	8,56		
Behavioral sub dimension	Too low		90	46,66	6,85	7,993	0,00*
	Low		104	49,13	6,55		
	Middle		67	44,37	8,54		
	High		41	43,90	8,23		
Happiness Scale	High		90	103,78	14,60	9,215	0,00*
	Middle		104	106,79	12,19		
	Low		67	95,35	16,21		
	Too low		41	99,95	16,09		

*p<0,05 is statistically significant.

According to ANOVA test which is to analyze life satisfaction, leisure attitude and happiness

level regarding their perceived income level, there is no significant difference in leisure attitudes and its cognitive and affective sub



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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GEL CODE: I12-I30-M12-M14-M54 ID:303 K:390

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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dimensions. However a significant difference in leisure in behavioral sub dimension points and happiness points was found ($p<0,05$). So that means participators who have more perceived income level have a better level of life satisfaction than any others. And also, participators who have less perceived income level have a worse level of life satisfaction than the one who have high and middle level

of perceived income level. And also, the ones who have more perceived income level, have more leisure attitude behavioral sub dimension points than the ones who have middle or low level. When we check the happiness levels, the ones who have a middle level of perceived income levels have more happiness than any other ones (Table 6).



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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Table 7. The Relationship of Life Satisfaction, Leisure Attitude and Happiness Level Points

		Life Satisfaction	Leisure Attitude	Cognitive Sub Dimension	Affective Sub Dimension	Behavioral Sub Dimension	Happiness
Life Satisfaction	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	302					
Leisure Attitude	Pearson Correlation	,103	1				
	Sig. (2-tailed)	,074					
	N	302	302				
Cognitive Subdimension	Pearson Correlation	,129*	,886**	1			
	Sig. (2-tailed)	,025	,000				
	N	302	302	302			
Affective Subdimension	Pearson Correlation	,103	,937**	,857**	1		
	Sig. (2-tailed)	,073	,000	,000			
	N	302	302	302	302		
Behavioral Subdimension	Pearson Correlation	,034	,778**	,442**	,585**	1	
	Sig. (2-tailed)	,556	,000	,000	,000		
	N	302	302	302	302	302	
Happiness Scale	Pearson Correlation	,095	,452**	,207**	,345**	,625**	1
	Sig. (2-tailed)	,100	,000	,000	,000	,000	
	N	302	302	302	302	302	302

* $p < 0,01$ ** $p < 0,05$ are statistically significant.

According to correlation analysis which is to analyze life satisfaction, leisure attitude and happiness level, there is no relationship



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International Refereed Academic Journal of Sports, Health and Medical Sciences

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ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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among life satisfaction, leisure attitude and happiness level. However, positive and low level of relationship between leisure attitude and cognitive sub dimension was found ($r=0.129$, $p<0.01$). Positive and middle level of relationship among leisure attitude and cognitive, affective and behavioral sub dimensions and happiness points were found ($r=-0.452$, $r=-0.207$, $r=-0.345$, $r=-0.625$; $p<0.05$). So that means, if leisure attitude increases positively, happiness level will also increase (Table 7).

DISCUSSION and RESULT

When we look at the results of this research which aims to designate and compare the happiness, leisure attitude and satisfaction levels of life, with regards to some variables, of those individuals who participate in recreational dancing activities, it is concluded that the participators' happiness levels are high, leisure attitudes are positive and satisfaction levels of life are medium; in addition to this, sub dimensions of the leisure attitude which are cognitive, affective, and behavioral sub dimensions were seen to have very close averages. In researches, similar to this one, that analyze life satisfaction is also concluded that life satisfaction is at high and at medium level. (Çelik ve Tümkaya, 2012; Şimşek, 2011; Öner, 2014; Özgen, 2012;). In literature, there are researches for different groups like university students (Akyüz, 2015; Kaya and

Gürbüz, 2015), soccer tennis sportsman (Pala et.al, 2015) also says that the leisure attitude is positive.

In the research, in accordance with another result, comparison of variables such as life satisfaction, leisure attitude and between the points of sub dimensions and happiness, statistically there is no significant difference. In researches similar to this (Çelik and Tümkaya, 2012; Gündoğar et. al, 2007; Öner, 2014; Özgür et. al, 2010; Tümkaya et.al, 2011; Yavuzer and Çivildag, 2014), they conclude that the life satisfaction is not changing based on the sex and these kinds of studies are majority. In addition to this, it has been observed that researches (Akyüz, 2015; Kaya and Gürbüz, 2015; Karunaanithy and Karunanithy, 2014) unlike this one, which concludes that the leisure attitude and sub dimensional points vary amongst the sex, are majority. Many researches on happiness have similar results like this one. (Aydemir, 2008; Kartal, 2013; Rasmussen and Laumann, 2014; Saygın, 2008; Tunçkol, 2015).

Regarding to the age group which is also one of the variables, there is no statistically significant difference in life satisfaction, leisure attitude and cognitive and affective sub dimensions. However, a significant difference was found in leisure attitude cognitive sub dimension and happiness points. Leisure attitudes of individuals who are 18-25 have



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(TRADEMARK)

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more positive points than the ones who are 26-33. Also, the ones who are 34 years old and above have higher level of happiness than any other age group; and the ones who are 23-33 years old and below have higher level of happiness than the ones who are 18 years old and below. On the contrary to this study, Kırıcı and Korkmaz's study (2014), Çavuş and Cumaliyeva's study (2013) which was related with the employees and Akandere et al.'s study (2009) which was related with the parent having children with mental disabilities, physical disabilities or both showed that life satisfaction level increased by age. The studies by Özgür et al. (2010) and Yavuzer and Çivildag (2014) also supported this results. Some of the studies (Akyüz, 2015; Pala et al., 2015) which were about leisure attitudes showed that leisure attitudes didn't change by age. Furthermore some of them said that leisure attitudes got positive levels when the age range increased (Akgül, 2011) or decreased (Kaya ve Gürbüz, 2015). In the studies by Gülcan (2014), Ciocognani et.al (2008) and Dierksen (2005), we can see that happiness level changes by age variables, and it is also said that happiness level doesn't change by age (Aydemir, 2008; Rasmussen and Laumann, 2014; Tunçkol, 2015).

While the participators levels of life satisfaction, leisure attitude and happiness do not vary according to educational levels, it is

observed that they change by the perceived income. The participants whose perceived income is higher than the others, have higher life satisfaction levels; and the participants whose perceived income levels are lower than the ones who have high or medium level of perceived income have lower life satisfaction levels than the others. Besides, leisure attitude scale behavioral sub dimension points of individuals who have more perceived income level are higher than the ones who have middle or high level of perceived income; and the ones who have a middle level of perceived income have higher points than the ones who have low level of income. When we analyze the happiness level, the ones who have middle and high level of income have high level of happiness than any others. Other studies also showed that, as the perceived income level increases, life satisfaction level also goes up (Kırıcı and Korkmaz, 2014; Öner, 2014; Özgür et. al, 2010; Yılmaz and Altınok, 2009), but the leisure attitude doesn't change by perceived income level (Akgül, 2011; Akyüz, 2015). Happiness level varies in different studies (Aydemir, 2008; Cummins, 2000; Özen, 2005; Paolini, Yanez and Kelly, 2006; Tuzgöl-Dost, 2010).

When we analyze the relationships of life satisfaction, leisure attitude and happiness, there is no significant correlation between life satisfaction, leisure attitude and happiness level.



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(TRADEMARK)

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However, a positive significant difference was found in leisure attitude cognitive sub dimension. A positive, middle-level relationship among cognitive, affective and behavioral sub dimensions and happiness points and leisure attitude was found. Even if it was figured out that life satisfaction cannot be affected by leisure attitude and happiness level, we could see that there were different kinds of variables which affected life satisfaction in a negative way. Some of them are hopelessness (Heisel and Gordon, 2004; Inname-rati et.al, 2014; Kodan, 2013; Mo, Lau, Yu, Gu, 2014; Pössel, Mitchell, Sjögren, Kristenso, 2015; Shek, 1998; Shek and Li, 2015; Steenwyk, Atkins, Bedics, Whitley, 2010; Tuzgöl, 2007; Winster et.al, 2015), loneliness (Tuzgöl, 2007; Yılmaz and Altınok, 2009), anxiety (Gündoğar et.al, 2007).

When we analyze all results of the study, we can see that happiness levels of individuals who are attending a dancing activity are high, leisure attitudes are positive and life satisfaction level is at middle level. As the age level and perceived income level increase, happiness levels also goes up; leisure attitude behavioral sub dimension points get more positive and life satisfaction level increase as the perceived income level goes up. Happiness level increases in direct proportion to leisure attitudes of individuals who are attending a dancing activity. This study can also be done

with different sample group and more people. Thanks to these kinds of dancing activities, positive changes can be achieved in individuals' physiological and social parameters.

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International Refereed Academic Journal of Sports, Health and Medical Sciences

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GEL CODE: I12-I30-M12-M14-M54 ID:303 K:390

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

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THE EFFECT OF BIOLOGICAL MATURITY ON GENDER- RELATED MOTOR SKILLS AT TALENT SELECTION THAT IS MADE ACCORDING TO CHRONOLOGICAL AGE IN SPORTS ¹

SPORDA KRONOLOJİK YAŞA GÖRE YAPILAN YETENEK SEÇİMİNDE BİYOLOJİK OLGUNLUĞUN CİNSİYETE GÖRE MOTOR BECERİLERE ETKİSİ

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Öz: Yapılan bu araştırmada 9-13 yaş grubu çocuklarda kronolojik yaşa göre yapılan yetenek seçiminde biyolojik olgunluğun motor beceri düzeylerine etkilerinin incelenmesi amaçlanmıştır. Araştırmaya Türkiye'nin değişik bölgelerinde (Ankara, Adıyaman, Bolu, Hatay, Karabük, Muğla, Sakarya, Samsun) 401 sedanter kız çocuğu ile 522 sedanter erkek çocuğu olmak üzere toplam, toplam 923 sedanter çocuk katılmıştır. Katılımcıların biyolojik olgunluk düzeylerinin belirlenmesinde Mirwald ve diğerleri (2002: 689) tarafından geliştirilen cinsiyet özelinde çoklu regresyon denklemleri kullanılmıştır. Katılımcıların beden kitle indekslerinin belirlenmesi amacı ile boy ve vücut ağırlığı ölçümleri alınmıştır. Bunun yanında, katılımcıların bazı motor beceri düzeylerinin belirlenmesi amacı ile parmak kavrama kuvveti, el kavrama kuvveti, durarak uzun atlama testi, sağlık topu atma testi, esneklik testi (otur-eriş), aktif sıçrama testi, anaerobik güç testi, 20 m sürat koşusu, pro-agility çabukluk testi ve 20 m mekik koşusu testleri uygulanmıştır. Araştırmanın sonunda 9-13 yaş grubunda bulunan kız ve erkek çocuklarının kronolojik yaş ve biyolojik olgunluğuna göre motor gelişim düzeyleri arasında istatistiksel açıdan anlamlı farklılık bulunduğu belirlenmiştir ($p<0.05$). Sonuç olarak, 9-13 yaş grubunda bulunan çocuklarda biyolojik olgunluğun motor gelişim düzeyini etkileyen bir unsur olduğu söylenebilir.

Anahtar Kelimeler: Biyolojik Olgunluk, Yetenek Seçimi, Motor Gelişim

Abstract: In this study, it has been aimed to evaluate the effects of biological maturity on motor skills at talent selection of children aged between 9-13 chronologically. In Turkey's various cities (Ankara, Adıyaman, Bolu, Hatay, Karabük, Muğla, Sakarya, Samsun) including 401 sedantary teenage girl and 522 sedantary teenage boy in total 923 sedantary children attended to the study. In the evaluation of biological maturity of attendants, regression equation which is in the speciality of gender developed by Mirwald and others (2002: 689) was used. To define the body mass index, boys' weight and height was measured. As well as to see attendants' some motor skills, these tests were used; finger and hand grabbing capacity, standing long jump test, test of throwing the health ball, flexity test, (sit-stand), active jumping, anaerobic strength test, 20-m speed running, pro-agility speed test, 20-m shuttle run test. At the end of the study, it was found out that there was a meaningful statistical difference of boys and girls aged 9-13 motor skills levels at the aspect of chronological age and biological maturity ($p<0.05$). As a result, it can be said that biological maturity is a factor affecting motor skills development skills.

Key Words: Biological Maturity, Talent Selection, Motor-Skills Development

Doi: 10.17363/SSTB.20162124011

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D33-J24-J28-J81-K34-K39 ID:302 K:389

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

From fecundation to birth and adolescence, some modifications realize as in other living organisms. In this process, height and body weight grows and cognitive system improves. Increase in people's quantitative features is called 'growth' Not only increase in outer appearances but also inner growth is included in growth. (Hasırcı et al, 2009: 3). But the changes of intensiveness in the components (%73,8 water, %19,4 fat and %6,8 mineral) of fat-free body mass of depending on children's growth and maturity causes the observation of an enduring changes in body measurements.

In parallel with changes in growing organisms body, maturity of organism and differentiation of biological functions is called 'development' (Aktepe, 2007: 17). Growth is defined as the most basic quantitative aspect of development. Completion (finish) of growth also means of completion of development (Topkaya, 2011: 3).

There are various factors affecting growth and development, one of them is gender. Besides some differences in growth and development processes related to gender, it is known that girls develop earlier than boys in various fields (Kraemer and Fleck, 2005: 31). Also growth and development features of boys and girls show similarity and differences reasonably in

some terms. For instance, at the age of 7-9, physical growth rate and physical appearances of boys and girls are in similar level. But with the beginning of adolescence, growth rate of girls surpasses the boys' growth rate (Muratlı, 2013: 15).

As well as there are some critical periods in development, it is important to make use of critical periods for both development to be healthy and not to waste the effort of trainers. Critic periods also give possibility for ideal learning and development. From birth to the age of 2, infant's swaddle contributes to reflexive motor skills to improve and provides a pre-condition for the next development pace. In the period of the age 3-6 children succeeding practising the basic movement skills, it provides an important basis for actions related to the sports for the age 7-10 (Topkaya, 2011: 43).

Motor development development area has different development skills other than age literature, there some research findings underlining age and gender variations on motor development skills is an important determinant (Milanese et al, 2010: 265). With the aspect of methodology, psycho-motor development is the ability to use the body organs, speed, adaptatiton, transfer of power, control of the body and make it skillfully with its children's upper-lower extremities. psycho-motor development plays an important role in cchild-



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rens's development as a whole. In children's development process, child tries new experiences and actions, analyzes the environment, touches the objects thus both satisfies his curiosity gradually and improves basis for learning in real meaning (Hasırcı et al, 2009: 27).

Physical education and sports activities which are evaluated as important for body development and supply of general health level, (Salar et al, 2012: 123; Keskin, 2014: 1; Hekim, 2016: 66; Güner, 2015: 23; Hekim, 2015: 1102 also is an effective factor for motor skills development (Açak, 2006: 6). The findings of the study shows that attending to sports of children improves motor skills, children who has the habit of doing sports is more improved than sedantary ones (Hekim et al, 2012: 31). Hergüner (2015) stated that sports is psycho-motor activity depending on mental and physical competition, increasing performance, socialized, educated by using different areas, in an individual or group with tool or without tool, requiring a plan and obeying rules, evaluated by weight, meter, time and measurement means (Hergüner, Bar ve Yaman, 2016:155-168). Sports is a phenomenon that aims to broaden the competition and surpass. For this, it is important to choose the ones more talented physically and train them with and enduring and intensive education from a sportive performance point

of view (Mülazımoğlu, 2007: 4). Talent selection is a decision that should be repeated again and again according to the long-term training aims, contents and abilities that expected. With the process of improvement of training, expectation of individual high quality result increases and it makes the criteria stricter to choose. Thus, number of chosen decreases gradually (Karl, 2001: 9).

When the data evaluated, not only attending to sports but also age and gender variables are the factors affecting motor development levels. Ages of 4-6-8-13 and 14 are the speeding terms of motor skills for boys. 11-15 ages is slow for motor development. But there is no development in 3-5-7-12-16 ve 17 ages. For girls; 4-6-9 is fast 8-11-12 and 13 ages are slow in motor development. In addition there is almost no development in the ages of 3-5-7-14-15-16 and 17. In both gender age of 3 and 7, motor development rate is zero (Muratlı, 2013: 122). As a contrast, it is seen that the research on the the effect of biological maturity on gender- related motor skills at talent selection that is made according to chronological age in sports was limited and it has been aimed in this study.

METHOD

The population of the research is the girls (3.683.096) not doing sports aged 9-14 (TUIK, 2013). The sample of the research is included



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the girls aged 9-14 (401 people) from various cities of Turkey (Ankara, Adıyaman, Bolu, Hatay, Karabük, Muğla, Sakarya, Samsun). In this content at least 50 children aged from each 1 to 14 are also included in this study.

At least one day before, the necessary information was given about the study. The attendants were applied these tests in an order finger and hand grabbing capacity, standing long jump test, test of throwing the health ball, flexity test, (sit-stand), active jumping, anaerobic strength test, 20-m speed running, pro-agility speed test, 20-m shuttle run test. They had full-rest in the break of the tests along the measurements. Protocols of tests applies are listed below;

Subjects' height was measured with stadiometer 0.01m sensitive degree (SECA, Germany) and their weight was measured with electronic bascule 0.01m sensitive degree (SECA, Germany).

Sitting Height Measurement: Holtain brand, 0.01m sensitive degree special-design sitting bench

Hand Finger-grabbing Capacity: Baseline brand hand dynamometre was used.

Finger-grabbing Capacity: Baseline brand hand dynamometre was used.

Flexity Test(Lay-Reach) Baseline brand (modified) Lay-Reach bench was used.

Vertical Jump Tests: Jumping platform measuring time of jumping and touching to the ground (Smartjump, Fusionsport, Avustralya) was used.

Photocell:20 m, 20-m speed running and pro-agility speed test Smartspeed (Fusionsport, Australia)

Timer for Shuttle Run Test: timer designed for 20m Shuttle Run Test to measure the running speed 1/1000 sensitive sc (Prosport, TMR. ESC 1000 Sport Test Tümer Mühendislik) was used.

Chronometer: 30sc shuttle test 1/1000 sensitive sc hand chronometer.

Health Ball: Protech brand 2kg health ball

Kruskall Wallis H-test was practised to show the difference between biological maturity rate and some motoric features. Z-scores was found to degree maturity coefficient. If the value found for Z is higher than 1 means 'late' less than 1 means 'Early' and values other than these signals 'middle maturity'. In SPSS 17 package program for statistical analyzes, level of significance was determined to be 0.05.



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FINDINGS

Table 1. Average and Standart Deviation Values That Belongs to Height, Weight and Body Mass Index According to Gender of Research Group

Age	(cm) Height		(kg) Body Weight		(kg/m ²) Body Mass index	
	♂	♀	♂	♀	♂	♀
9 (♂=57; ♀=66)	130.9±7.0	126.7±6.6	28.9±5.0	27.5±5.0	16.7±1.7	17.0±2.2
10 (♂=64; ♀=54)	136.2±10.3	136.1±9.3	33.1±9.3	34±8.2	17.7±3.2	18.2±3.0
11 (♂=112; ♀=70)	140.4±8.6	142.9±7.3	37.8±10.4	38.8±9.6	19.0±4.1	18,8±3,4
12 (♂=123; ♀=59)	145.2±8.8	147.7±8.0	39.7±9.8	42.4±7.9	18.6±3.3	19.4±3.0
13 (♂=95; ♀=65)	152.9±9.4	153.4±6.5	45.2±10.6	48.6±8.8	19.2±3.0	20.6±3,5
14 (♂=71; ♀=87)	156.8±8.6	154.8±7.9	48.9±10.5	54.6±11	19.7±3.0	22.8±5.1
Total (♂=522; ♀=401)	144.5±12.0	144.3±12.5	39.6±11.4	41.8±12.8	18.6±3.4	19.7±4.1

♂= Boy; ♀= Girl

When Table 1 is examined, it was observed that height and body weight of attendants in

both gender there is a linear increase depending on the age.

Table 2. Table of Findings Related to Evaluation of Flexity Performances According to Gender Variables

FLEXITY	9 age	10 age	11 age	12 age	13 age	14 age
Boy	-	-	E>O>G	E>O>G	-	-
Girl	-	E>O	E>O	-	E>O	E>O>G

When flexity variables examined, it is observed that the boys aged 11-12-13-14 shows

more change numerally than the ones aged 9-10, besides in terms of biological maturity



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in the group of 11-12 the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late . When flexity variables examined, in the group of girls aged 10, 11, 13 14 there is a meaningful difference. In terms of biological maturity in the group of 10 11-13 the ones developing earlier are proportionally

more advantageous than the ones developing normally, there is no comparison of the girls developing late in this group. In terms of biological maturity in the group of 14 the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late.

Table 3. Table of Findings Related to Evaluation of 20m Speed Running Performances According to Gender Variables

20m Speed Running	9 age	10 age	11 age	12 age	13 age	14 age
Boy	-	-	G>O>E	E>G>O	E>G>O	-
Girl	O>E>G	O>E	O>E	O>G>E	O>E	-

When speed variables examined, in the group of boys aged 11, 12, 13 there is a meaningful difference. it is observed that in terms of biological maturity in the group of boys aged12-13 the ones developing earlier are more advantageous than the ones developing late, developing late are more advantageous than developing normally. In the group of boys aged11 the ones developing late are more advantageous than the ones developing normally, developing normally are more advantageous than developing earlier in terms of biological maturity. When speed variables ex-

amined in the group of boys girls9 10 11, 12, 13 there is a meaningful difference. in terms of biological maturity in the group of girls 10 11-13 the ones developing normally are proportionally more advantageous than the ones developing earlier, There is no comparison of the girls developing late in this group. In the group of girls aged 9-12 the ones developing normally are more advantageous than the ones developing earlier, developing earlier are more advantageous than developing late in terms of biological maturity.



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 4. Table of Findings Related to Evaluation of 20m Shuttle Running Performances According to Gender Variables

20m Shuttle running	9 age	10 age	11 age	12 age	13 age	14 age
Boy	-	-	-	-	-	-
Girl	-	E>O	E>O	E>O	-	-

When endurance variables examined, in the group of boys, there is no meaningful difference. in the group of girls aged only 10 11 12 a meaningful change is observed. In terms of biological maturity in the group of girls 10

11-12 the ones developing earlier are proportionally more advantageous than the ones developing normally, there is no comparison of the girls developing late in this group.

Table 5. Table of Findings Related to Evaluation of Right Hand Grabbing Performances According to Gender Variables

Right Hand Grabbing	9 age	10 age	11 age	12 age	13 age	14 age
Boy	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G
Girl	E>O>G	E>O	E>O	E>G>O	-	-

When right hand grabbing variables examined, in the group of boys aged 9 10 11, 12, 13, 14 there is a meaningful difference. In terms of biological maturity in the group of boys the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late. When right hand grabbing variables examined, in the group of girls aged 9 10 11, 12, there is a meaningful difference. It is observed that in terms of biological maturity in the group of girls aged 10-11 the ones developing earlier are more advantageous than the ones develop-

ing normally. There is no comparison of the girls developing late in this group. In terms of biological maturity in the group of girls aged 9 the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late. it is observed that in terms of biological maturity in the group of girls aged 12 the ones developing earlier are more advantageous than the ones developing late, developing late are more advantageous than developing normally.



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(TRADEMARK)

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Table 6. Table of Findings Related to Evaluation of Left Hand Grabbing Performances According to Gender Variables

Left Hand Grabbing	9 age	10 age	11 age	12 age	13 age	14 age
Boy	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G	O>E>G
Girl	E>O>G	E>O	E>O	E>O>G	E>O	-

When left hand grabbing variables examined, in the group of boys aged 9 10 11, 12, 13, 14 there is a meaningful difference. In terms of biological maturity in the group of boys the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late. It is observed that in terms of biological maturity in the group of boys aged 14 the ones developing normally are more advantageous than the ones developing earlier, developing earlier are more advantageous than developing late. When left hand grabbing variables examined,

in the group of girls aged 9 10 11, 12, 13,14 there is a meaningful difference. It is observed that in terms of biological maturity in the group of girls aged 10-11 and 13 the ones developing earlier are more advantageous than the ones developing normally. There is no comparison of the girls developing late in these groups. It is observed that in terms of biological maturity in the group of girls aged 9-12 the ones developing earlier are more advantageous than the ones developing normally, developing normally are more advantageous than developing late.

Table 7. Table of Findings Related to Evaluation of Right Finger Grabbing Performances According to Biological Maturity and Chronological Age

Right FingerGrabbing Strength	9 age	10 age	11 age	12 age	13 age	14 age
Boy	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G
Girl	-	E>O	-	-	-	-

When right finger grabbing variables examined, in the group of boys aged 9 10 11, 12, 13, 14 there is a meaningful difference. It is observed that in terms of biological maturity in the group of girls aged 10 the ones devel-

oping earlier are more advantageous than the ones developing normally. There is no comparison of the girls developing late in these groups.



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(TRADEMARK)

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Table 8. Table of Findings Related to Evaluation of Left Finger Grabbing Performances According to Biological Maturity and Chronological Age

Left finger Grabbing Strength	9 age	10 age	11 age	12 age	13 age	14 age
Boy	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G	E>O>G
Girl	-	E>O	-	-	-	-

When left finger grabbing variables examined, in the group of boys aged 9 10 11, 12, 13, 14 there is a meaningful difference. In terms of biological maturity in the group of boys the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late.

When left finger grabbing variables examined, in the group of girls aged only 10 there is a meaningful difference. It is observed that in terms of biological maturity in the group of girls aged 10 the ones developing earlier are more advantageous than the ones developing normally. There is no comparison of the girls developing late in these groups.

Table 9. Table of Findings Related to Evaluation of Health Ball Grabbing Performances According to Gender

Throwing Health Ball	9 age	10 age	11 age	12 age	13 age	14 age
Boy	-	-	O>E>G	E>O>G	E>O>G	E>O>G
Girl	E>G>O	E>O	-	-	-	-

When health ball throwing variables examined, in the group of boys aged 11, 12, 13, 14 there is a meaningful difference. In terms of biological maturity in the group of boys aged 12 13 14 the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late. When health ball throwing variables examined, in the group of girls aged 9 and devel-

oping earlier there is more meaningful difference than the ones developing late and the developing late show more difference than the ones developing normally. It is observed that in terms of biological maturity in the group of girls aged 10 the ones developing earlier are more advantageous than the ones developing normally. There is no comparison of the girls developing late in this group.



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 10. Table of Findings Related to Evaluation of Long Jump by Standing Performances According to Biological Maturity and Chronological Age

Long Jump by Standing	9 age	10 age	11 age	12 age	13age	14 age
Boy	-	-	-	-	-	E>O>G
Girl	E>O>G	-	E>O	-	E>O	-

When long jump by standing variables examined, in terms of biological maturity in the group of boys aged only 14 the ones developing earlier are proportionally more advantageous than the ones developing normally, the ones developing normally are more advantageous than developing late. When long jump by standing variables examined, in the group of girls aged 9 11 13 there is a meaningful difference.

In terms of biological maturity in the group of boys aged 11 13 the ones developing earlier are proportionally more advantageous than the ones developing normally. There is no comparison of the girls developing late in these groups. It is observed that in terms of biological maturity in the group of girls aged 9 the ones developing earlier are more advantageous than the ones developing normally.

Table 11. Table of Findings Related to Evaluation of Agility Performances According to Biological Maturity and Chronological Age

Agility	9 age	10 age	11 age	12 age	13 age	14 age
Boy	-	-	O>E>G	-	E>O>G	-
Girl	-	-	E>O	-	-	-

When agility variables examined, in the group of boys aged 11, 13 there is a meaningful difference. In terms of biological maturity in the group of boys aged 11 the ones developing normally are proportionally more advantageous than the ones developing earlier, developing earlier are more advantageous than developing late. There is no comparison of the girls developing late in this group. When agility variables examined, it is observed that

in terms of biological maturity in the group of girls aged 11 the ones developing earlier are more advantageous than the ones developing normally. In terms of biological maturity in the group of boys aged 13 the ones developing earlier are proportionally more advantageous than the ones developing normally, developing normally are more advantageous than developing late.



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 12. Table of Findings Related to Evaluation of Vertical Vaulting Performances According to Biological Maturity and Chronological Age

Vertical Vaulting	9 age	10 age	11 age	12 age	13 age	14 age
Boy	-	-	-	-	-	-
Girl	-	E>O	E>O	G>E>O	-	-

When vertical vaulting variables examined, in the group of boys there is no meaningful difference, in the group of girls aged 10 11 12 show meaningful difference. In terms of biological maturity in the group of girls aged 10 11 the ones developing earlier, are proportionally more advantageous than the ones developing normally. There is no comparison of the girls developing late in this group. It is observed that in terms of biological maturity in the group of girls aged 12 the ones developing earlier are more advantageous than the ones developing normally.

DISCUSSION

When flexity performances examined, it is found out that biological maturity has a meaningful effect on flexity performances for boys and girls. According to the findings both boys and girls developing earlier has higher performance of flexibility than the ones developing late. As is known, features of articulation capsules, fascia and structural features of muscles, tendon, structure of ligament, body of skin are the main factors that affects flexity performances physically and physiologically.

(Özer, 2006: 160). In this content, on the basis of flexity performances for the benefit of children developing earlier is that anatomical and physiological features affecting flexity performances to develop earlier biologically. When speed and agility performances examined, it is found out that biological age has an meaningful effect on flexity performances for boys and girls. According to the findings both boys and girls developing earlier has higher speed and agility performance than the ones developing late. As is known, process of motor skills development consist of gaining the moving skills and practising the movements. In this process, development of neuro-motor sytem is of first priority. Because it has an important role in regulation of moving skills. Besides, developed motoric skills provides practising body movements. For example, development in muscle power is prior to the speed performance. (İnan, 2004: 25). Hekim and Albayrak found out that development of power in the leg effects speed performance positively. In this content, on the basis of the positive affect of biological maturity of children attending to the study to speed and agili-



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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D33-J24-J28-J81-K34-K39 ID:302 K:389

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

ty performances, developing earlier has more neuromotor power features affecting speed and agility performances than the ones developing normally or late. When endurance performances examined, it is found out that biological age has a meaningful effect on endurance performances for boys and girls. According to the findings both boys and girls developing earlier has higher performance of endurance than the ones developing late. As is known, activity in all systems of respiration, cardiovascular, muscle and endocrine, metabolisms and quality of energy sources, development levels of various psychological features, locomotor system, and central nervous system are the factors affecting endurance performance. Also development of endurance differentiates according to genetic structure, aerobic and speed of development in anaerobic capacity. (Sevim, 2010: 366). In this content, on the basis of the positive effect of biological maturity of children to physical and physiological performances, developing earlier has more neuromotor power features affecting speed and agility performances than the ones developing normally or late. Rowland (2005: 23) stated that biological development in children affects endurance performance and with the age important changes realize in the factors affecting endurance performance (stroke volume level, weight of heart, maximal ventilation size). When upper-extremity power performances exam-

ined, it is found out that biological age has a meaningful effect on upper-extremity power performances including right hand grabbing, left hand grabbing, right finger grabbing, left finger grabbing and health ball throwing for boys and girls. According to the findings both boys and girls developing earlier has higher performance of upper-extremity power performances than the ones developing late. When the studies are examined in literature, age and gender are counted in the factors affecting development of power. (De Ste Croix, 2008: 203; Croix, 2007: 292; Hekim ve Hekim, 2015: 114). Besides development of muscle mass plays a big role in power development. While a girl at the age of 6 has 7 kg muscle in puberty, she gets 23 kg muscle mass in adolescence. In puberty, the changes in hormonal body improves the comprise of hypertrophy, in parallel with power development. (Kraemer and Fleck, 2005: 15; Rowland, 2005: 23-183). The study by Cerrah and Yüksel, stated that lower-extremity muscle mass develops with the age. (2015: 20). In this content, on the basis of the high speed in the development of children muscle mass and hormonal structure, children developing earlier has more power development than the ones developing normally or late.

It is required that sport accords with changing as part of changing and developing conditions continually. Most important way of this



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

adaptation is that institution renews itself, evaluates potentials by analyzing changing opportunities, determines most suit strategy and applies this strategy (Işıkgöz and Taşkiran, 2015: 7). One of these factors will be that institutions, which do talent selection, renews itself.

Measurement of biological age in the paces of talent development in education and practises and preparation of training contents is outstanding. Otherwise because of incompatibility of calender age and biological abilities, biomotor skills wil not reach the highest level (that should be) (Balyi and Hamilton, 2004: 4-9). So approaches of long-term sportsman development are the ones relying on biological age. But in our country neither talent selection nor training periods are done by taking into consideration of these criteria.

RESULT

As a result, performances of biological maturity, motoric features are the factors in selection of talented sportsman and paces of talent development in the same chrological age children. In the groups of 9-14 biological maturity has effect on power, speed, flexibility, agility, and endurance performance. According to the findings both boys and girls developing earlier has higher performance of motor than the ones developing late in biological maturity. On the basis of study's result, children

developing earlier has higher motor performance of physical, anatomical and pysiologi-cal features than the ones developing late in biological maturity. The findings of this study are supplied in literature. In the light of this study, biological age in addition to motor performance should be taken into consideration in tests for talent selection.

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International Refereed Academic Journal of Sports, Health and Medical Sciences

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GEL CODE: D33-J24-J28-J81-K34-K39 ID:302 K:389

ISSN Print: 2146-8508 Online 2147-1711

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(TRADEMARK)

(2015/04315- 2015-GE-18972)

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(2015/04315- 2015-GE-18972)

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BASKETBOL SPORCULARIN RISK DEĞERLENDİRME
DÜZEYLERİNİN İNCELENMESİ ¹

ANALYZING RISK ASSESSMENT LEVEL OF BASKETBALL PLAYERS

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Öz: Bu araştırmanın amacı Türkiye Basketbol Ligi kulüplerindeki sporcuların risk değerlendirme düzeylerini ortaya koymak ve sporda risk yönetiminin önemini vurgulamaktır. Araştırmada “genel tarama modeli” kullanılmıştır. Araştırmanın evrenini, Türkiye Basketbol ligi takımlarında aktif olarak oynayan sporcular oluştururken, örneklemi ise; rastgele ve tesadüfi yöntemle seçilmiş farklı kulüplerde oynayan 229 sporcu oluşturmaktadır. Araştırmada veri aracı olarak Gök (2006) ve Çobanoğlu (2008)’nin sporda risk değerlendirme ölçeği kullanılmıştır. Ölçeğin güvenirliliğine ilişkin Cronbach alpha iç tutarlılık katsayısı .921 olarak bulunmuştur. Bu sonuçlar ölçekten elde edilen puanların güvenilir olduğunu kanıtlamaktadır. Veriler SPSS 22.0 istatistik paket programı yardımıyla analiz edilmiştir. Elde edilen sayısal değerler 0.05 anlamlılık düzeyine göre değerlendirilmiştir. Araştırmaya katılan basketbol sporcularının risk değerlendirme düzeyleri cinsiyet, yaş, medeni durum, eğitim durumu ve basketbol oynama yılı değişkenlerine göre istatistiksel olarak anlamlı bir fark bulunmamıştır ($p>0,05$).

Anahtar Kelimeler: Risk, Risk Yönetimi, Risk Değerlendirme, Basketbol

Abstract: The aim of this research is to present risk assessment level of the players in teams of Turkish Basketball league and to emphasize the importance of risk assessment in sports. General screening model was used in this research. The active players in Turkish Basketball League are the target population of the study and randomly selected 229 players playing in different clubs constitute the research sample. Risk assessment scale in sports belonging to Gök (2006) and Çobanoğlu (2008) was used in this study as a risk assessment scale. Regarding the reliability of the scale, .921 value was found as Cronbach alpha internal consistency coefficient. These results prove that the points obtained from the scale are reliable. Data were analyzed with SPSS 22.0 statistical package program. Numerical values obtained were evaluated by the significance level of 0.05. There are no statistically significant differences between the risk assessment level of participant basketball players and the variables of gender, age, marital status, educational status and number of years spent playing basketball. ($p>0.05$)

Key Words: Risk, Risk Management, Risk Assessment, Basketball

Doi: 10.17363/SSTB.20162124005

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SSTB

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D80-D81-G10-G11-H50-H51-M42 ID:307 K:129

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Risk is a condition in which a return depends on the alternative situations of future and at least one of these situations results in negative or positive return (Usta, 2008: 253).

Risk is defined as the probability of not reaching a desired result or the probability of the occurrence of an undesired incident and a function of the violence created in case it occurs (Başak & Gülen, 2008: 57, cited from Brehmer, 1994; Vaughan, 1997; Adler v.d., 1999; Ruan, 2001).

While some people take risk in their daily life and at work, some others prefer avoiding risks. There are three main components of risk; the first one is the incident, i.e. an undesired change, the second one is the probability of the occurrence of this incident and the last one is the effect of this incident when it occurs (Kerzner, 1998).

Establishing the risks to be encountered by companies in the future and managing these risks is highly important. Moreover, determining the risk level of the company and developing the policies that will ensure recovery with minimum damage is only possible with risk management (Kara & Yereli 2012). It can be uttered that this situation becomes more of an issue in terms of the sports clubs that incorporate and conduct transactions within the

growing sports industry and develop as economic units.

Risk management is a rational and systematic method that determines, analyzes, applies, operates and establishes relation between risks related to any activity, function and operation. It is also a system directed to minimizing the losses of enterprises and maximizing the opportunities (Topçu, 2013: 19). The actual purpose of risk management is to reveal risk being an abstract concept and to make it concrete – i.e. measurable with numbers – in order to control it (Almassri, 2013: 12).

Risk management in sports is an administrative approach that requires strategy, plan and program and related to the fulfilment of loss and removal of the responsibilities after incidents. Risk management in sports is directed to the protection of sports clubs, their organizations, players, trainers and managers, income and image of sports organization (Çobanoğlu & Güven, 2013: 2). All sports branches or recreational activities include a set of risk seven if appropriate precautions are taken and in that case, players, trainers or fans may come across lots of dangers (Nohr, 2009: 3).

It Risk?? may create negative effects on the institutions where competition conditions become fiercer, the balance of risk and income cannot be established well and risk manage-



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

ment is not conducted appropriately and effectively. Therefore, it is an extremely important subject to establish, measure and manage the risks today in ensuring the continuity of the existence of sports clubs and helping them reach their targets (Günel, 2015: 2).

For an effective risk management, risks should be planned, evaluated, controlled and financed if necessary. In that case, risks can be determined and controlled for every individual facing with risks and an effective management is ensured. Not only the managers of sports clubs but also players and trainers have responsibilities concerning risk management. Players and trainers should fulfil these responsibilities in order to reach the targets set. The studies and researches conducted in this topic in the world emphasize the importance of creating a risk management department within the body of every sports club or institution (Fuller & Drawer, 2004).

The process of risk assessment is a stage in which risks are defined by determining and analyzing them together with the concepts of probability and result. This is the hardest and most time-consuming stage of risk management (Küçük, 2003). The main purpose of risk assessment is to protect the health and safety of employees, to reduce all kinds of health dangers and to minimize the effects (Öktem, 2011: 12). The aim of this research is to present risk assessment level of the players

in teams of Turkish Basketball League and to emphasize the importance of risk assessment in sports.

MATERIAL and METHOD

“General screening model” being one of the descriptive screening methods was used in this research. Players playing in basketball clubs of Turkey constitute the research population and a total of randomly selected 229 players playing in basketball clubs of Turkey are the sample group of the research. Risk assessment scale in sports belonging to Gök (2006) and Çobanoğlu (2008) was used in this study as the data tool. The items (1, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 26, 28, 29, 30, 31) in the item pool of risk assessment scale were taken from the measurement tool developed by Gök (2006) and the items (2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 23, 24, 27) in the item pool were taken from the measurement tool developed by Çobanoğlu (2008). As a result of the factor analysis conducted on data obtained, the items (8, 9, 10, 12, 18, 23, 26, 27) with low factor load or with high load value from more than one factor were excluded from the scale. Following the recurrent factor analysis, it has been observed that 23 items in the scale explain 51.64% of total variance. This value indicates that the scale ensures the construct validity as is. Regarding the reliability of the scale, .921 value was found as Cronbach alpha internal consistency coefficient. These



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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results prove that the points obtained from the scale are reliable. Data were analyzed with statistical package program. Numerical val-

ues obtained were evaluated by the significance level of $p < 0.05$.

RESULTS

Table 1. Analysis on Risk Assessment Levels of Players by the Sex Variable

Sex	N	\bar{x}	Ss	t	p
Male	123	74,81	14,54	-,741	,460
Female	106	76,46	19,08		

$p > 0,05$

As can be seen in Table 1, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the sex vari-

able was not found statistically significant ($p > 0,05$). It is observed that the risk averages of female players ($\bar{x} = 76,46$) are higher than the male players ($\bar{x} = 74,81$). However, it has been determined that this difference is not significant.

Table 2. Analysis on Risk Assessment Levels of Players by the Age Variable

Age	N	\bar{x}	Ss	F	p
14-17	69	79,11	18,81	9,634	,052
18-21	48	71,00	17,33		
22-25	51	75,03	13,73		
26-29	29	75,62	12,17		
30 and over	32	75,62	18,44		

$p > 0,05$

As can be seen in Table 2, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the age variable was not found statistically significant

($p > 0,05$). Concerning the arithmetic average result of risk assessment scale of players by the age variable, it is observed that the risk averages of the players aged between 14-17 is ($\bar{x} = 79,11$), this average for those aged between 18-21 is ($\bar{x} = 71,00$), 22-25 is (\bar{x}



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=75,03), 26-29 is ($\bar{x}\bar{x}$ =75,62) and 30 and over is ($\bar{x}\bar{x}$ =75,62). Risk averages of players aged between 14 and 17 ($\bar{x}\bar{x}$ =79,11) are observed

to be higher than the risk averages of other age groups. However, it has been determined that this difference is not significant.

Table 3. Analysis on Risk Assessment Levels of Players by the Marital Status Variable

Marital Status	N	\bar{x}	Ss	t	p
Married	30	72,70	14,09	-1,007	,315
Single	199	76,01	17,13		

$p>0,05$

As can be seen in Table 3, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the marital

status variable was not found statistically significant ($p>0,05$). It is observed that the risk averages of single players ($\bar{x}\bar{x}$ =76,01) are higher than the married players ($\bar{x}\bar{x}$ =72,70). However, it has been determined that this difference is not significant.

Table 4. Analysis on Risk Assessment Levels of Players by the Education Variable

Education	N	\bar{x}	Ss	F	p
High School	96	77,29	18,10	,868	,421
University	122	74,38	15,64		
Graduate Program	11	73,81	17,12		

($p>0,05$).

As can be seen in Table 4, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the education variable was not found statistically significant ($p>0,05$). It is observed that the risk averages of high school graduate players ($\bar{x}\bar{x}$

=77,29) are higher than the university graduate players ($\bar{x}\bar{x}$ =74,38) and the players having graduate education ($\bar{x}\bar{x}$ =73,81). However, it has been determined that this difference is not significant.



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 5. Analysis on Risk Assessment Levels of Players by the Variable of Number of Years Spent Playing Basketball

Number of Years Spent Playing Basketball	N	\bar{x}	Ss	F	p
1-5	35	75,00	20,73	,612	,654
6-10	97	76,50	16,78		
11-15	58	74,98	15,59		
16-20	24	71,70	17,24		
21 and more	15	79,40	9,06		

$p>0,05$

As can be seen in Table 5, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the variable of number of years spent playing basketball wasn't found statistically significant ($p>0,05$). It is observed that the risk averages of players playing basketball for 1-5 years are ($\bar{x}=75,00$), the averages of those playing basketball for 6-10 years are ($\bar{x}=76,50$), it is ($\bar{x}=74,98$) for 11-15 years, ($\bar{x}=71,70$) for 16-20 years and ($\bar{x}=79,40$) for 21 years and more. It has been established that the risk averages of the players playing basketball for 21 years and more ($\bar{x}=79,40$) are higher than the risk averages of other years. However, it has been determined that this difference is not significant.

DISCUSSION and CONCLUSION

Concerning Table 1, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the sex variable was not found statistically significant ($p>0,05$). It is observed that the risk averages of female players ($\bar{x}=76,46$) are higher than the male players ($\bar{x}=74,81$). However, it has been determined that this difference is not significant. Kayalar and Ömürbek (2007: 15) have stated that there is not a significant difference between female and male students regarding the perception of the tendency for taking risks primarily, in the study of Demirhan et al. (2004: 72) on risk perception regarding sports branches, risk averages of female participants have been found to be higher than the risk averages of male participants. The results of these researches support the findings of our study.



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In our research, risk assessment scale points of basketball players were not found statistically significant by the age variable ($p>0,05$). Risk averages of players aged between 14 and 17 ($\bar{x}=79,11$) are observed to be higher than the risk averages of other age groups (Table 2). However, it has been determined that this difference is not significant. In the study of Gök (2006) on volleyball players and the study of Karataş (2012: 101) on handball players regarding their risk assessment, they have specified that there is not a significant difference between the risk assessment levels of players in terms of age groups. According to a research conducted by Bayar (1999), the risk-taking behaviors of individuals increase till the senior year of high school and decrease during university. This can also be explained with the fact that individuals grow to maturity in years and approach to situations in a more realistic way and comply with the requirements of life more realistically (Aktaş & Erhan, 2015: 48). The findings of our research are in line with the literature.

As can be seen in Table 3, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the marital status variable was not found statistically significant ($p>0,05$). It is observed that the risk averages of single players ($\bar{x}=76,01$)

are higher than the married players ($\bar{x}=72,70$). However, it has been determined that this difference is not significant. Saraç and Kahyaoğlu (2011) could not find a significant difference between single and married groups regarding the tendency for taking risk. In the study of Çobanoğlu (2008: 45) on risk assessment of football players, a significant difference could not be found between groups by the marital status variable.

As can be seen in Table 4, the difference between the group averages of the risk assessment scale points of basketball players that constitute the research group by the education variable was not found statistically significant ($p>0,05$). It is observed that the risk averages of high school graduate players ($\bar{x}=77,29$) are higher than the university graduate players ($\bar{x}=74,38$) and the players having graduate education ($\bar{x}=73,81$). However, it has been determined that this difference is not significant. According to the results of various researches conducted by Erdem (2014: 105-112), Erel (2008: 64), Laughhunn et al. (1980) and McInish (1982), a significant relation couldn't be found between education level and risk tendency. These results comply with the findings of our research.

As can be seen in Table 5, the difference between the group averages of the risk as-



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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D80-D81-G10-G11-H50-H51-M42 ID:307 K:129

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

sessment scale points of basketball players that constitute the research group by the variable of number of years spent playing basketball was not found statistically significant ($p>0,05$). It has been established that the risk averages of the players playing basketball for 21 years and more ($\bar{x}=79,40$) are higher than the risk averages of other years. However, it has been determined that this difference is not significant. Gök (2006) has determined that the risk assessment level of volleyball players does not differ significantly by the variable of term of office. Karataş (2012) has stated that the difference between the risk assessment scale points of handball players and group averages by the variable of number of years spent playing handball was not found statistically significant. Erdem (2014) has concluded that the more professional experience is, the higher the risk perception is. The results of these researches show parallelism with the findings of our study.

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: D80-D81-G10-G11-H50-H51-M42 ID:307 K:129

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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AN INVESTIGATION OF HEALTHY LIFE STYLE BEHAVIORS OF
TURKISH WRESTLING FEDERATION COACHES ¹TÜRKİYE GÜREŞ FEDERASYONU'NDAKİ ANTRENÖRLERİN
SAĞLIKLI YAŞAM BİÇİMİ DAVRANIŞLARININ İNCELENMESİVedat ÇINAR¹, Taner AKBULUT², Salih ÖNER³, Zarife PANCAR³,
Muhammed Emre KARAMAN²¹ Firat University, Faculty of Sports Sciences, Physical Education and Sport Department, Elazığ / Turkey² Firat University, Faculty of Sports Sciences, Coaching Training Department, Elazığ / Turkey³ Firat University, Enstitute of Health Sciences, Physical Education and Sport A.D. Elazığ / Turkey

Öz: Bu çalışmanın amacı; Türkiye Güreş Federasyonunda görev yapan antrenörlerin sağlıklı yaşam biçimi davranışlarının incelenmesidir. Araştırmanın evrenini Türkiye Güreş Federasyonunda görev yapan antrenörler oluştururken; örneklemini Nisan 2015 yılında Elazığ ve Sivas ilinde yapılan Yıldızlar Türkiye şampiyonası (Serbest-Grekoromen)'nda görevli olan toplamda 100 Erkek Antrenör oluşturmuştur. Araştırmada, Sağlıklı Yaşam Biçimi Davranışlarının incelenmesine yönelik "Sağlıklı Yaşam Biçimi Davranışları Ölçeği II" kullanılmıştır. Araştırmada elde edilmiş olan veriler SPSS 17 paket programı ile analizleri yapılmıştır. Farklılıkları belirlemek için One Way Anova ve Independent t testi yapılmıştır. Araştırmada yer alan antrenörlerin SYBD ölçeği genel ortalaması 142.36±16.0 puan (min:98, max:169) olarak tespit edilmiştir. Sağlık durumunun iyileştirilmesine katkı sağlayan davranışlar içerisinde en yüksek puan ortalamaları sırasıyla manevi gelişim, kişilerarası iletişim, , en düşük ortalama ise sağlık sorumluluğu, stres yönetimi ve destek, egzersiz ve beslenme alışkanlığına aittir. Sigara kullanmayanların sigara kullananlara göre, düzenli spor yapanların spor yapmayanlara göre ortalamalarının daha yüksek olduğu tespit edilmiş olup istatistiksel olarak anlamlı bir sonuç görülmüştür. Yaş, kademe, görev süresi, bakımından SYBD'da istatistiksel olarak anlamlı bir farklılık bulunmadığı tespit edilirken; bunun yanında, düzenli olarak spor yapanların spor yapmayanlara göre beslenme düzeylerinin yüksek olduğu tespit edilmiştir. Sonuç olarak; Güreş Federasyonunda görev yapan antrenörlerin SYBD orta seviyede olduğu görülmüştür. SYBD'nın kavranması ve günlük hayatta uygulanabilmesi için konu ile ilgili düzenlenecek sempozyumlar ve eğitim seminerlerinin antrenörlere faydalı olacağı söylenebilir.

Anahtar Kelimeler: Sağlıklı Yaşam Biçimi, Güreş, Antrenör

Abstract: The purpose of this study is to investigate the healthy life style behaviors of coaches who working in Turkey Wrestling Federation. While the population of the research was Turkey Wrestling Federation Coaches and the samples of research created from 100 male coaches who participated in Turkey Championship Stars Categories in 2015 April. In this study "Healthy Lifestyle Behaviors Scale II (HLBS)" was used. The obtained data from the survey results were analyzed with SPSS 17 software package. One Way Anova and Independent Samples t tests were used to analyze the data to determine the differences between the groups. The coaches Healthy Lifestyle Behaviors Scale score means are determined as: 142.36±16.0 points. To contribute behaviors for development of health the highest mean scores, self-actualization, health responsibility, which found support in stress management and interpersonal dimension respectively, and the lowest average exercise and eating habits. As a result, there was a significant relationship between healthy life style behaviors and smoking, age, occupation time. Coaches who are nonsmokers have higher interpersonal communication, health responsibility and spiritual development than smokers. Old coaches give more importance to physical activities. Coaches who do regular exercise have higher healthy life style behaviors than don't exercise. Consequently: It can be said that; Symposiums and educational seminars that made could be beneficial for their Healthy Lifestyle Behaviors and their application in daily life.

Key Words: Healthy Lifestyle, Wrestling, Coach

Doi: 10.17363/SSTB.20162124012

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I11-J10-M10 ID:316 K:400

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

Healthy life style is defined as to control all attitudes affecting individual's health and to choose appropriate behaviors for their health condition in order to organize their daily activities. Behaviors which improve the health condition include behaviors that increase the level of well-being and promote self-improvement. Healthy lifestyle behaviors include enough and regular exercise, proper nutrition, non-smoking, health responsibility, stress management and hygienic measures (Esin, 1998 87-95).

In 1974, the World Health Organization defined health as "not just lack of illness or disability but state of complete physical, mental, social well-being". Today the point of view of health; centered care approach that emphasizes the importance of protecting the health of the individual, the family and the community and ensures, sustains its continuity. This approach based on that to ensure the person maintains well-being, acquires behaviors that will ensure and maintain continuity, and ensures that he or she makes the right decisions about his or her health (Tashiro, 2002: 59-70).

The conditions of life in the age that we are living in create inactive individuals. According to the World Health Organization (WHO) 2002 report, a less active life leads 1.9 million people to losing their lives per year world-

wide. In a large part of society, physical activity is perceived as synonymous with "sports". However, physical activity is defined as the result of energy expenditure in daily life by using muscles and joints and activities that cause an increase in heart and respiratory rate and result in fatigue at different rates. In this direction, exercise together with sports activities, games and various activities performed during the day are accepted as physical activities. There are 4 main areas where people can be physically active during the day. These are the working environment, transportation (walking, cycling, etc.), home work, leisure time activities (sports and recreational activities). (Akyol et al, 2008: 7, Ozer and Baltaci 2008: 14-23).

In the Ottawa Charter for Health Promotion, published after the International Health Promotion Conference (1986), held in Ottawa, Canada on November 17-21, 1986, it is determined by supporting the first objective health of the improvement of health situation, political, economic, social, attitudes and biological factors to be beneficial to the health status of individuals. Another goal is to remove the existing health condition differentiations and provide similar opportunities and resources for people. Another goal of Ottawa Charter is to bring state governments, health and other socio-economic sectors, non-governmental organizations and media to a common point



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(TRADEMARK)

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for bring health to better condition (Bahar, 2006: 1131-1186).

A person who makes healthy lifestyle behaviors an indispensable part of his or her life can maintain a healthy condition and can bring it to a good level. For this reason, improving and sustaining healthy lifestyle behaviors is the basis of being healthy and protecting from diseases. At the same time, this situation emphasizes the importance of activities to improve lifestyles, which are the most important factor in the prevention of diseases and improvement of health status (Zaybak and Fadiloglu, 2004: 77-95). It is known that; HLBS total scores and subscale scores of students who do regular exercise have higher score means than other students who do not do regular exercise (Vural and Bakir, 2015: 41).

Healthy life style is defined as to control all attitudes affecting individual's health and to choose appropriate behaviors for their health condition in order to organize their daily activities. Behaviors that improve the health condition include behaviors that increase

the level of well-being and promote self-improvement. Healthy lifestyle behaviors include enough and regular exercise, proper nutrition, non-smoking, health responsibility, stress management and hygienic measures (Walker et al., 1987: 76-81; Bahar et al., 2008: 1-12).

METHOD

Population of the study is Coaches working in the Turkey Wrestling Federation and the sample is 100 male coaches in the Stars Turkey Championship (Fr-Gr) held in Elazig and Sivas provinces in April 2015. In statistical analysis (SPSS 17.0) program was used. For binary group Independent t-test and for multiple group One way anova test were used.

“Healthy Life Style Behaviors Scale II” with six subscales (health responsibility, physical activity, nutrition, spiritual development, interpersonal relations and stress management) which is developed by Walker et al. (1987: 76-81) and customized to Turkish by Bahar et al. (2008: 1-12), was used in the study.



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FINDINGS

Table 1. Demographic Variables of Coaches

VARIABLES		N	%
AGE	20-24	3	3,0
	25-29	18	18,0
	30-34	23	23,0
	35-39	22	22,0
	40-44	14	14,0
	45-49	10	10,0
	50-54	6	6,0
	55-59	2	2,0
	60 +	2	2,0
	TOTAL	100	100
SENIORITY	1.STAGE	11	11,0
	2. STAGE	47	47,0
	3. STAGE	34	34,0
	5. STAGE	8	8,0
	TOTAL	100	100,0
PERIOD OF OFFICE	0-4 years	23	23,0
	5-9 years	40	40,0
	10-14 years	14	14,0
	15-19 years	12	12,0
	20-24 years	6	6,0
	25-29 years	1	1,0
	30-34 years	1	1,0
	35 +	3	3,0
	TOTAL	100	100,0
SMOKING	YES	36	36,0
	NO	64	64,0
	TOTAL	100	100,0
HOW OFTEN DO YOU EXERCISE	NEVER	3	3,0
	RARELY	33	33,0
	REGULARLY	64	64,0
	TOTAL	100	100,0



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As is seen in the Table 1 according to coaches' age variable %3,0 is 20-24 years, %18,0 is 25-29 years, %23,0 is 30-34 years, 22,0% is 35-39 years, %14,0 is 40-44 years, %10,0 is 45-49 years, %6,0 is 50-54 years, %2,0 is 55-59 years, and %2,0 of the sample is 60 + years. According to seniority variable it is seen relatively; 11,0% in the first stage, 47,0% in the second stage, 34,0% in the third stage and 8,0% in the fifth stage. According to period of office variable it is seen relatively;

%23,0 is 0-4 years, %40,0 is 5-9 years, %14,0 is 10-14 years, %12,0 is 15-19 years, %6,0 is 20-24 years, %1,0 is 25-29 years %1,0 is 30-34 years, and %3,0 of the sample has 35+ years of period of office scores. According to smoking variable; 36,0% were smoking and 64,0% were not smoking and according to the frequency of exercise; %3,0 is never, %33,0 is rarely, 64,0% seems to regularly do exercise.

Table 2. Healthy Lifestyle Behaviors Independent Samples t and ANOVA Test Values of Coaches

HEALTHY LIFESTYLE BEHAVIORS		N	HealthyLifestyle (Mean±Sd)		p
SMOKING	YES	36	136,4	15,4	0,00
	NO	64	145,6	15,5	
AGE	20-24	3	135	14,1	0,07
	25-29	18	145,6	19	
	30-34	23	145,4	14,3	
	35-39	22	138,7	15,3	
	40-44	14	134,6	8,76	
	45-49	10	144,7	18,3	
	50-54	6	144,6	16,6	
	55-59	2	134,5	17,6	
	60 +	2	172	11,3	
	Total	100	142,3	16	



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SENIORITY	1.STAGE	11	146,6	15,5	0,34
	2.STAGE	47	142,6	16	
	3.STAGE	34	142,7	16,7	
	5.STAGE	8	133,2	13,2	
	Total	100	142,3	16	
PERIOD OF OFFICE	0-4	23	145,9	14,4	0,22
	5-9	40	138,4	15,8	
	10-14	14	147,4	17,6	
	15-19	12	140,4	14	
	20-24	6	142,5	18,7	
	25-30	1	149	0	
	30-34	1	120	0	
	35 +	3	156,3	20,6	
	Total	100	142,3	16	
HOW OFTEN DO YOU EXERCISE	NEVER	3	130,6	13	0,01
	RARELY	33	137	13,3	
	REGULARLY	64	145,6	16,6	
	Total	100	142,3	16	

In Table 2, the average of the non-smokers ($145,6 \pm 15,5$) was higher than the smokers ($136,4 \pm 15,4$) in the coaches, and a statistically significant difference was found ($p < 0,05$). According to age and When the coaches fre-

quency of exercise variables were examined it was seen that; Never is $130,6 \pm 13$, Sometimes is $137 \pm 13,3$ and Regularly is $145,6 \pm 16,6$ and there was a significant differences ($p < 0,05$).



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

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Table 3. Healthy Lifestyle Behaviors According to Age Groups ANOVA Test Values of Coaches

	AGE	N	Healthy Lifestyle		p
			Behaviors (Mean±Sd)		
HEALTH RESPONSIBILITY	20-24	3	20,33	4,72	0,57
	25-29	18	22,16	4,14	
	30-34	23	22,21	2,67	
	35-39	22	20,81	3,14	
	40-44	14	19,85	3,39	
	45-49	10	21,8	4,82	
	50-54	6	20,66	5,95	
	55-59	2	21	2,82	
	60 +	2	24,5	6,36	
PHYSICAL ACTIVITY	20-24	3	19,66	1,15	0,01
	25-29	18	21,16	3,34	
	30-34	23	20,78	2,81	
	35-39	22	19,54	4,09	
	40-44	14	18,28	1,43	
	45-49	10	23,3	4	
	50-54	6	20,5	4,03	
	55-59	2	20	0.00	
	60 +	2	24,5	0,7	
NUTRITION	20-24	3	22,33	0,57	0,68
	25-29	18	21,88	3	
	30-34	23	22,52	3,08	
	35-39	22	22,22	2,95	
	40-44	14	21,57	2,34	
	45-49	10	22,3	2,83	
	50-54	6	22,66	3,77	
	55-59	2	21,5	2,12	
	60 +	2	26,5	3,53	



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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I11-J10-M10 ID:316 K:400

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

SPIRITUAL DEVELOPMENT	20-24	3	27,33	3,05	0,47
	25-29	18	28,88	5,25	
	30-34	23	30	3,68	
	35-39	22	28,81	3,81	
	40-44	14	28,35	3,02	
	45-49	10	28,5	5,42	
	50-54	6	30	4,09	
	55-59	2	26	7,07	
	60 +	2	35	1,41	
INTERPERSONAL SUPPORT	20-24	3	25,66	3,51	0,24
	25-29	18	28,66	4,75	
	30-34	23	27,52	4,48	
	35-39	22	26,77	4,27	
	40-44	14	26,21	3,49	
	45-49	10	26	5,27	
	50-54	6	27,83	3,76	
	55-59	2	23,5	12	
	60 +	2	34,5	0,7	
STRESS MANAGEMENT	20-24	3	19,66	2,3	0,23
	25-29	18	22,83	4,28	
	30-34	23	22,39	4,55	
	35-39	22	20,54	4,63	
	40-44	14	20,35	2,06	
	45-49	10	22,8	3,82	
	50-54	6	23	4,47	
	55-59	2	22,5	0,7	
	60 +	2	27	1,41	

Table 3 gives a comparison of the scores obtained by the participant coaches from the subscales of healthy lifestyle behaviors ac-

cording to age status. In table 3, there is a significant difference in physical activity subscale scores ($p < 0,05$).



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(TRADEMARK)

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Table 4. Healthy Lifestyle Behaviors According to Seniority ANOVA Test Values of Coaches

		N	Healthy Lifestyle		p
SENIORITY			Behaviors (Mean±Sd)		
HEALTH RESPONSIBILTY	1.Stage	11	23,45	2,97	0,13
	2.Stage	47	21,38	3,6	
	3.Stage	34	21,2	3,92	
	5.Stage	8	19,5	4	
	Total	100	21,4	3,73	
PHYSICALACTIVITY	1.Stage	11	20,81	2,22	0,71
	2.Stage	47	20,06	3,4	
	3.Stage	34	20,82	3,82	
	5.Stage	8	21,12	3,79	
	Total	100	20,49	3,45	
NUTRITION	1.Stage	11	22,27	1,95	0,78
	2.Stage	47	22,27	3,16	
	3.Stage	34	22,44	2,92	
	5.Stage	8	21,25	2,37	
	Total	100	22,25	2,89	
SPIRITUAL DEVELOPMENT	1.Stage	11	29,27	4,22	0,20
	2.Stage	47	29,19	4,03	
	3.Stage	34	29,61	4,24	
	5.Stage	8	26,12	4,58	
	Total	100	29,1	4,2	
INTERPERSONAL SUPPORT	1.Stage	11	27,45	5,95	0,04
	2.Stage	47	28,08	3,75	
	3.Stage	34	27	4,2	
	5.Stage	8	23,12	6,7	
	Total	100	27,25	4,57	



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(TRADEMARK)

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STRESS MANAGEMENT	1.Stage	11	23,36	3,35	0,64
	2.Stage	47	21,65	4,67	
	3.Stage	34	21,61	3,68	
	5.Stage	8	22,12	3,79	
	Total	100	21,87	4,14	

Table 4 compares the scores obtained from subscales of healthy lifestyle behaviors in terms of coaching level variables. According to this, a significant difference was found in

favor of those who have 2nd stage coaching certificate in interpersonal support subscale scores ($p<0,05$).

Table 5. Healthy Lifestyle Behaviors According to Period of Office ANOVA Test Values of Coaches

PERIOD OF OFFICE	N	Healthy Lifestyle		P	
		Behaviors (Mean±Sd)			
HEALTH RESPONSIBLTY	0-4	23	22,60	3,46	0,31
	5-9	40	21,11	3,14	
	10-14	14	22,07	4,51	
	15-19	12	20,00	4,19	
	20-24	6	20,83	2,40	
	25-30	1	16,00	0	
	30-34	1	25,00	0	
	60 +	3	20,33	8,08	
	Total	100	21,40	3,73	



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PHYSICAL ACTIVITY	0-4	23	21,30	2,75	0,09
	5-9	40	19,55	3,30	
	10-14	14	20,42	3,50	
	15-19	12	20,83	4,66	
	20-24	6	20,83	2,04	
	25-30	1	27,00	0	
	30-34	1	17,00	0	
	60 +	3	24,00	3,60	
	Total	100	20,49	3,45	
NUTRITION	0-4	23	22,04	2,24	0,44
	5-9	40	22,05	3,02	
	10-14	14	22,64	3,34	
	15-19	12	22,41	2,87	
	20-24	6	22,16	3,06	
	25-30	1	22,00	0	
	30-34	1	18,00	0	
	60 +	3	25,66	3,05	
	Total	100	22,25	2,89	
SPIRITUAL DEVELOPMENT	0-4	23	29,13	4,40	0,34
	5-9	40	28,37	4,02	
	10-14	14	31,07	4,04	
	15-19	12	29,25	3,44	
	20-24	6	28,33	5,88	
	25-30	1	31,00	0	
	30-34	1	23,00	0	
	60 +	3	31,66	4,04	
	Total	100	29,10	4,20	



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTERPERSONAL SUPPORT	0-4	23	27,86	4,58	0,45
	5-9	40	26,70	4,38	
	10-14	14	28,14	3,61	
	15-19	12	26,66	3,17	
	20-24	6	26,16	9,10	
	25-30	1	29,00	0	
	30-34	1	21,00	0	
	60 +	3	31,66	3,51	
	Total	100	27,25	4,57	
STRESS MANAGEMENT	0-4	23	22,95	3,39	0,14
	5-9	40	20,67	4,95	
	10-14	14	23,07	3,36	
	15-19	12	21,25	3,04	
	20-24	6	24,16	2,78	
	25-30	1	24,00	0	
	30-34	1	16,00	0	
	60 +	3	23,00	2,64	
	Total	100	21,87	4,14	

Table 5 gives the comparison of the scores obtained by the coaches participating in the study from the subscales of healthy lifestyle

behaviors according to their period of office. According to this, no significant difference was found in any subscale scores ($p>0.05$).



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

**Table 6. Healthy Lifestyle Behaviors According to Smoking Independent
Sample t Test Values of Coaches**

SMOKING STATUS		N	Healthy Lifestyle		p
			Behaviors (Mean±Sd)		
HEALTH RESPONSIBILITY	YES	36	20,41	3,43	0,04
	NO	64	21,95	3,81	
PHYSICAL ACTIVITY	YES	36	20,05	3,13	0,34
	NO	64	20,73	3,62	
NUTRITION	YES	36	21,86	3,21	0,31
	NO	64	22,46	2,69	
SPIRITUAL DEVELOPMENT	YES	36	27,69	4,40	0,01
	NO	64	29,89	3,89	
INTERPERSONAL SUPPORT	YES	36	25,44	4,81	0,01
	NO	64	28,26	4,14	
STRESS MANAGEMENT	YES	36	20,97	3,59	0,10
	NO	64	22,37	4,36	

Table 6 compares the scores obtained by the research group from the subscales of the scale of healthy lifestyle behaviors in terms of smoking variables. Accordingly, a significant difference was found in the subscale scores

of health responsibility in favor of the non-smokers ($p<0.05$). Significant differences were found in favor of non-smokers' spiritual development and interpersonal support subscale scores ($p<0.05$).



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 7. Healthy Lifestyle Behaviors According To Frequency of Exercise ANOVA Test Values of Coaches

HOW OFTEN DO YOU EXERCISE		N	Healthy Lifestyle Behaviors (Mean±Sd)		p
HEALTH RESPONSIBILITY	NEVER	3	20,00	1,73	0,08
	RARLEY	33	20,33	4,03	
	REGULARLY	64	22,01	3,53	
	Total	100	21,40	3,73	
PHYSICAL ACTIVITY	NEVER	3	19,66	0,57	0,12
	RARLEY	33	19,54	4,09	
	REGULARLY	64	21,01	3,07	
	Total	100	20,49	3,45	
NUTRITION	NEVER	3	17,66	1,15	0,00
	RARLEY	33	21,87	2,57	
	REGULARLY	64	22,65	2,91	
	Total	100	22,25	2,89	
SPIRITUAL DEVELOPMENT	NEVER	3	26,33	5,03	0,36
	RARLEY	33	28,69	3,09	
	REGULARLY	64	29,43	4,63	
	Total	100	29,10	4,20	
INTERPERSONAL SUPPORT	NEVER	3	24,66	2,08	0,04
	RARLEY	33	25,84	3,28	
	REGULARLY	64	28,09	5,02	
	Total	100	27,25	4,57	
STRESS MANAGEMENT	NEVER	3	22,33	6,11	0,13
	RARLEY	33	20,69	3,81	
	REGULARLY	64	22,45	4,15	
	Total	100	21,87	4,14	

Table 7 gives a comparison of the scores that the research group obtained from the sub-scales of the scale of healthy lifestyle behaviors in terms of how often they do sports.



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(TRADEMARK)

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According to this, there is a significant difference in the level of interpersonal support subscale scores for those who regularly do sports. This differentiation is in favor of who do regularly exercise ($p<0.05$). There is a significant difference in nutrition subscale score means. This differentiation is in favor of who do regularly exercise ($p<0.05$).

DISCUSSION

In terms of the findings, the mean Score of Healthy Lifestyle Behaviors (HLBS) of the coaches that constituting the research group was determined as 142.36 ± 16.0 points. It can be said that the HLBS scores of the coaches are in the middle level when it is thought that maximum 192 points can be taken from the scale (Karadeniz et al., 2008: 497-502). Zaybak and Fadiloglu (2004: 77-95) point out that the scores determined in the studies conducted with HLBS in our country have changed between 122.5 and 104.6 on average. The same researcher conducted a survey on university students and found that the students had a HLBS score of 121.2139. (Zaybak and Fadiloglu, 2004: 77-95). In studies designed in the same direction; Karadeniz et al. (2008) HLBS score was $125,9 \pm 17,4$, Cihangiroglu and Deveci (2011), $121,75 \pm 18,86$ in Health College students, Ayaz et al. (2005) was $122.0 \pm 17,2$ and Ilhan et al. (2010) were $126,44 \pm 18,49$ and Pasinlioglu and Gozum (1998) were $117,5 \pm 17,1$ respec-

tively determined the scores as shown (Ayaz et al., 2005: 26-34; Karadeniz et al., 2008: 497-502; Cihangiroglu and Deveci, 2011: 77-83: 35-43; Ilhan, 2010: 35-43; Pasinlioglu and Gozum, 1998: 60-68). Ozkan and Yilmaz (2008) (8.18 ± 2.77), Cihangiroglu and Deveci (2011) (8.89 ± 3.33) found the lowest subscale score as exercise in the study with nurses.

The highest score means obtained from the attitudes that contribute to the improvement of the health status are, respectively, the dimensions of self-fulfillment, health responsibility, stress management and interpersonal support, while the lowest mean is in exercise and nutrition habits. When studies related to the topic in the literature are examined, it appears that they are supportive to our study (Walker et al., 1987: 76-81; Nesime et al., 2012: 3-4; Pasinlioglu and Gozum, 1998: 60-68; Kefeli, 2010: 58-59; Akgul, 2008: 59.). It can be said that in accordance with the results of our study and the similar studies in the literature, the education in the field of health affects the display of healthy lifestyle behaviors in the expected direction.

In our study it is found that smokers had lower total HLBS scores and nutritional habit scores than non-smokers ($p<0.05$). Ozkan and Yilmaz (2008: 90-105) reported that the average nutrition scores of smokers were lower in their study about healthy lifestyle behaviors of nurses working at the hospital. Ayaz



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

et al. stated that the nutrition subscale scores of students who never smoked or gave up, were higher than smokers (Ayaz et al., 2005: 26-34). In the study conducted by Karadeniz et al. (2008: 497-502) to university students, there was no statistical difference between the students' HLBS and smoking habit score means.

It was determined that the HLBS score means of coaches who do exercise regularly were higher than those who did not exercise regularly ($p < 0.05$). Cihangiroglu and Deveci (2011: 78-83) found that, nurses who regularly exercise were found to have a higher total score of HLBS than those who did not exercise regularly. In the study of Ozkan and Yilmaz (2008: 90-105), nurses who stated that they regularly exercise, were found to have a higher total score of HLBS than those who did not exercise regularly. It is known that regular exercise have a positive effect on health. Similar study results which are related to the topic also support this effect.

CONCLUSION

As a result; it is seen that the coaches who work in the Turkish Wrestling Federation have the HLBS general scores at the middle level. According to the study results; the coaches were given the highest scores from self-realization, health responsibility, stress management and interpersonal support sub-

scale, the lowest scores were taken from total HLBS scores of exercise and nutrition habits. A statistically relationship seen with HLBS total score, smoking and frequency of exercise, but there were no statistically significant relationship between age, seniority and period of office variables.

In this direction it is suggested that; The Wrestling Federation could include seminars on improving health behavior, to determine by scientific researches whether the given seminars have been transformed into correct health attitudes, and to make the necessary improvements, by paying attention to the points they have low scored (training, nutrition) giving education with this direction and work to support the health status of the workplace (reproduction of sports activity fields, exercise programs, keeping healthy food options in cafeterias and canteens, etc.) in which coaches work.

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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Author's Note: This study was presented as Oral at the The 10th International Conference In Physical Education, Sports And Physical Therapy- ICPEST2016, Firat University, Elazig, Turkey, 18-20 November, 2016

EXAMINING THE EFFECT OF PSYCHOMOTOR TRAINING ON THE
COORDINATION, AGILITY AND BALANCE IN 10-11 YEAR-OLD
GIRLS ¹10-11 YAŞ KIZ ÇOCUKLARINDA PSİKOMOTOR ANTRENMANIN
KOORDİNASYON ÇEVİKLİK VE DENGİ ÜZERİNE ETKİSİNİN
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Öz: Bu çalışma, Araştırmacılar tarafından planlanan psiko motor antrenmanın, 10-11 yaşındaki kız çocuklarında koordinasyon, çeviklik ve denge üzerine etkisinin incelenmesi amacıyla yapılmıştır. Antrenman 8 hafta ve her haftada 3 gün 40dk'lık süreyle yapılmıştır. Çalışmaya Ankara Sincan Hacı Bektas-ı Veli Ortaokulu'nda öğrenim gören ve testlerin yapılmasına engel olabilecek akut veya kronik herhangi bir hastalığı olmayan, 10-11 yaşındaki 5.sınıf kız öğrencilerinden 30 kişi çalışma (deney) grubu ve 31 kişi kontrol grubu olmak üzere toplam 61 kız öğrenci gönüllü olarak katılmıştır. İlk başta deney ve kontrol gruplarına koordinasyon, çeviklik ve denge becerilerinin ön testleri uygulanmış, deney grubuna 8 haftalık psikomotor antrenmandan yaptırdıktan sonra son testler uygulanmıştır. Psikomotor antrenmanın koordinasyon, denge ve çeviklik üzerinde olan etkisini belirlemek için kontrol ve deney gruplarında yapılan ön test ve son test ölçme sonuçlarının arasındaki farklara bakılmıştır. Verilerin analizinde SPSS 22 programından yararlanılmış, kontrol ve deney grupları arasındaki farklılıkların değerlendirilmesinde General Linear Model, Multivariate (MANOVA) analizi kullanılmıştır. Deney grubu örneklemelerinde denge ($p<0.01$), çeviklik ($p<0.01$) ve koordinasyon ($p<0.01$) ön ve son testlerin arasında istatistiksel olarak anlamlı fark olduğu gözlenmiştir. Kontrol grubu örneklemelerinde ise, denge ($p>0.05$), çeviklik ($p>0.05$) ve koordinasyon ($p>0.05$) ön ve son testlerin arasında istatistiksel olarak anlamlı fark olmadığı gözlenmiştir. Sonuç olarak, 8 hafta boyunca haftada 3 kez 40'ar dakikalık, denge duruşlarını, farklı tempo, kuvvet ve pozisyonlarla farklı yönlerde yapılan hareketleri içeren psiko-motor antrenmanın denge, çeviklik ve koordinasyon üzerinde oldukça olumlu etkisinin olduğu ve bu becerileri geliştirdiği görülmüştür.

Anahtar Kelimeler: Psikomotor Antrenman, Motor Beceriler, Zihinsel Beceriler

Abstract: This study was conducted by the researchers with the aim to examine the influence of 10-11 year-old girls' psychomotor training on coordination, agility and balance. The training was done for 40 minutes, 3 times a week and lasted 8 weeks. 61 10-11 year-old 5th grade female students who did not have any acute and chronic illnesses at Ankara SincanHacıBektas-iVeli Secondary School participated in the study (experiment) group; 31 of them, in control group. Firstly, study and control groups were applied pre-tests of coordination, agility and balance; then post-test was applied on the study group after the 8-week psychomotor training. To define the influence of psychomotor training on coordination, agility and balance, the difference between the pre and post-tests that were applied on the study and control groups were examined. SPSS 22 program was used to analyze the data; and Linear Model, Multivariate (MANOVA) analysis was used to assess the difference between the control and study groups. In the study group samples, it was observed that there was a statistically significant difference between balance ($p>0.05$), agility ($p<0.01$) and coordination ($p<0.01$) pre and post-tests. In control group samples, it was observed that there was not any statistically significant difference between the balance ($p>0.05$), agility ($p>0.05$) and coordination ($p>0.05$) pre and post-tests. As a result, it was seen that 40-minute-long psychomotor training which was done 3 times a week during 8 weeks and included balance stands, moves with different tempo, force, positions and directions had quite important influence on balance, agility and coordination and improved these skills.

Key Words: Psychomotor training, Motor Skills, Mental Skills

Doi: 10.17363/SSTB.20162124346

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I11-J10-M10 ID:317 K:394

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

INTRODUCTION

The word “psychomotor” precisely means “movement.” Every individual starts developing physically in mother’s womb. When they are born, this development quickens and continues. While some of the movements which were previously reflexes continue as such; by conscious usage of the organs, some transform into psychomotor abilities. Psychomotor development is described as the process of taking the behaviors which emerge in lifelong psychomotor abilities under control. The said behaviors occur with the cooperative work of sense organs, mind and muscles (Milli Eğitim Bakanlığı, Psikomotor Gelişim, 2007: 3).

The child gaining force and speed in using his or her arm, legs and all organs, coordinating the body organs and being skillful at controlling them is called kinetic; namely psychomotor development. This development goes hand in hand with physical development and enables one to comply with the environment. It plays an important role in the individual’s development as a whole (Yeşil yaprak, 2006: 3:61). Psychomotor development follows a regular line from head to toe, from inside (center) out and from large muscles to small muscles (Milli Eğitim Bakanlığı, Psikomotor Gelişim, 2007: 3-4).

Terms of motor development and psychomotor development are often substituted. Psycho-

motor development examines an individual’s lifelong locomotor behavior from prenatal period. Motor development involves children’s development of locomotor and physical abilities (Yalçın, 2007: 4-5).

Carrying out consecutive multiple movements with various directions, tempo and force constitutes the psychomotor training (Rintala, Pi-enimaki, Ahonen, Cantell and Kooistr, 1998: 721-737). It is known that psychomotor training has an effect on developing basic motor abilities.

Bompa defined the ability of coordination as “The Notion of Sports or Sports Intelligence” (Bompa, 2011: 365).

Oswald, Rupprecht, Gunzelmann and Tritt (1996: 67-72) stated that there is a positive correlation between the development of coordination abilities and psychomotor training.

Balance, which is an important psychomotor ability is maintaining the center gravity of the body on the vertical support bar (Hrysomallis, 2011: 221-232).

According to Marius (2012: 496-501), balance is a crucial component in maintaining the body in different positions during the application of motor ability groups. Balance is examined in two sub-categories; static balance and dynamic balance. While static balance is described as the ability to maintain the



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(TRADEMARK)

(2015/04315- 2015-GE-18972)

body's balance on a specific point or position, or the ability to control the postural oscillation while standing in motionless position, dynamic balance is the ability to balance the body while moving (Duncan, 1990: 192-7).

It can be said that balance ability is a parameter which greatly affects the coordination ability. Balance ability has an important part especially during the applications of agility which is one of the parameters that affect the coordination ability (Kaya, 2015: 15).

Hazar (2005: 148) defines agility as the quick application of a skill.

Quality of agility requires the cooperation of speed, balance, force and coordination. Agility, which is a motor skill, can be developed with regular progressive exercise (Karacabey, 2013: 1693-1704).

Coordination, agility and balance are not only motor, but also psychological parameters and it is known that these factors are related to psychomotor training (Oswald et al., 1996: 67-72).

Jogging and running by switching direction and speed, climbing, balance movements, jumps and rotations, coordination, balance and agility movements which are done by combining a number of movements, passing under or over the obstacles increase the quality and level of motor features; and at the

same time, increase the psychological factors' level such as making quick decisions, combining complex movements, being creative in unusual circumstances and choosing the most logical solution (Rintala et al., 1998: 721-737).

Coordination, agility and balance are considered as crucial motoric and psychological factors in creating the movement series techniques in a lot of sports branch and applying them with better and higher performance.

Therefore, the influence of 10-11 year-old girls' psychomotor training on coordination, agility and balance which are among the motoric skills is examined and the findings gathered from the data, discussion, conclusion and suggestions are displayed.

MATERIALS and METHOD

Research Design

In this study, pre-test post-test from the experimental techniques was used with the control group model and the study has an experimental qualification.

As per the participants, a total amount of 61 female students voluntarily participated in the study, while they studied in the 5th grade at the HacıBektas-iVeli Middle-school in Ankara, Turkey, with their ages varying between 10-11, and they were divided into 2 groups, where 30 of them were placed into the ex-



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(TRADEMARK)

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perimental group and 31 were placed into the control group. The students who participated in the study showed no signs of any acute or chronic illnesses while appropriate permissions were taken from their families.

Firstly, the necessary information was explained to the participants regarding the Coordination, Agility and Flamingo balance tests and the tests were applied to the students and the results were noted. Afterwards, coordination, agility and balance-developing psychomotor training exercises were applied to the participants in the experimental group three times a week for 8 weeks and with the duration of 40 minutes each time. On the other hand, no training schedule was applied to the control group. In the end of this time period, the same tests were applied to the control and experimental groups and the differences between the pre-test post-test results were noted.

The training applied in our study includes balance walking, shuttle run, plyometric exercises, passing under and over obstacles, turns, changing speed and direction while running, forwards and backwards somersault and standing in balance positions such as glider.

Rintala, Pienimäki, Ahonen, Cantell and Kooistra (1998: 721-737) similarly applied general motor movements, ball skills (move-

ments conducted with a ball) and movements applied in unusual situations, which equated into a 3 dimensional psychomotor training program. The content of the training consisted of movements such as walking and running while changing direction and speed, climbing, jumping on a trampoline, rhythmic capriole on the floor, capriole with a rope, dynamic balance, jumping towards an aim, jumping with a ball and turning and going under obstacles after jumping (Rintala et al., 1998: 721-737).

Applied Tests

Coordination Test

Forwards and backwards somersault: The participant is requested to perform quick somersaults forwards and backwards.

Passing Through Obstacles: The participant passes through 2 obstacles which are 50 cm in height, as fast as they can, while passing under the first obstacle and over the second one. In cases where these exercises are not performed correctly, the participant is requested to re-do the exercises.

Walking on the Balancing Beam: The participant starts the exercise by stepping on one of the steps which is 20 cm high while the balancing beam itself is 4 m in length and 52,5 m in height. The participant walks and runs on the balancing beam until they reach the end.



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(TRADEMARK)

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Steps on a 20 cm step again while getting off of the beam. In case the participant falls, they begin again starting at the point where they fell.

5 Capriole with both legs to the left and right on a bank: Performing 5 capriole in a row with both legs while jumping over the obstacle which is 40 cm in height, 20 in width and 120 cm in in length without knocking the obstacle over. In case the bank is knocked over, it is put back up and the participant continues from where they left off.

Carrying a basketball: The participant takes three basketballs from one of the two frames that are 10 cm in height and 1 square meter in size, and carries them to the other frame located 4 meters away from the first frame. In case the basketballs fall out of the frames, they get put back into the frames.

Slalom: The participant performs a criss-cross between 4 slalom poles.

Sprinting (7m): The distance between the slalom poles and the finish line, which is 7 meters, is sprinted and the station is completed. The time spent in these stations are recorded through the stopwatch at the finish line.

Scoring: The best performance receives (40) points. The participants' scores are listed with a scoring system of (2) where they are scored accordingly from the top performance to bot-

tom. Similar use of the coordination test was described in the single-stage judo exercise. (Tekasamali judo sinavtalimati, 2015: 1-6).

Flamingo Balance Test (Standing in Balance on the Beam on One Leg)

A wooden or metal beam which is 45 cm long, 5 cm high and 4 cm wide sitting fixatedly on two support pieces which are 15 cm long and 4 cm wide is needed in order to apply this test.

The participant attempts to stand in balance on the flamingo balancing beam for 1 minute on one leg without falling. The participant bends their leg behind which is not on the beam while holding their leg from the foot with the hand on the same side and standing on the beam on one leg like a flamingo. They may however take some support from the arm of the assistant with their other hand while trying to come to the balance point. Upon balancing on the beam, the participant says that they are ready and takes their arm off of the assistant. The test begins as soon as they let go of the assistant's arm. In this case, the participant needs to attempt to keep their balance for 1 minute. The test will be stopped every time the balance fails. For example, the participant letting go of the leg they were holding, or touching the ground with any other part of their body will disrupt the balance. After every pause, the application is re-



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started and continues until the 1-minute mark is reached. Sozen (2012: 1455-1460) applied a similar Flamingo Balancing in their study. A similar flamingo balancing test was used in the single stage judo examination instruction (Tekasamali judo sinavtalimati, 2015: 1-6).

Agility Test

Two cones are placed on a flat surface with a distance of 15 meters between them. The participant waits readily near the first cone while their feet should not be past the cone. They run to the other cone as fast as possible upon receiving the signal (i.e. whistle). They slow down when they reach the cone, touch the cone and turn around. This run is repeated 5 times and the test is finished on the other side of the cone at the starting position. The clock starts ticking when the participant lifts their foot and the stopwatch is stopped and the time is noted when any part of the participant passes the finish line (line which is positioned

perpendicularly on the ground). The measurement of the test is performed by the milliseconds (Mark D. Sleeper, Lisa K. Kenyon & Ellen Casey, 2012: 124-138).

Data Analysis

SPSS 22 software was used in the analysis of the data. General Linear Model, Multivariate (MANOVA) analysis was used in the evaluation of the differences between the results gathered from the control and experimental groups regarding the effects of the coordination, agility and balance improving psychomotor training that was applied to the 10-11 year-old female students 3 times a week for 8 weeks, over the coordination, agility and balance skills of the participants.

FINDINGS

The differences between the pre and post-tests of the students.



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(TRADEMARK)

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Table 1. The Differences Between the Pre and Post-Tests in the Experimental Group

Source	Dependent Variable	Type III Sum of Squares	df	Means		Mean Square	F	Sig.	Partial Eta Squared
				Pre	Post				
Experimental Group	Balance	112,06	1	4,59	1,98	112,06	11,899	,001**	,157
	Agility	31,40	1	23,93	22,55	31,40	16,165	,000**	,202
	Coordination	1565,70	1	47,09	37,35	1565,70	69,806	,000**	,522
Error	Balance	602,71	64			9,417			
	Agility	124,35	64			1,943			
	Coordination	1435,47	64			22,429			
Total	Balance	1429,30	66						
	Agility	35804,67	66						
	Coordination	120649,85	66						
Wilks' Lambda of the pre-test and post-test		F	df			Error df	Sig.	Value	
		24,579 ^b	3,0			62,00	,00	.457	.543

****p< 0.00, *p< 0.05**

When Table 1 is examined, Wilk's $\Lambda=.457$, $F(3,62)= 24,57$, $p= .00$, partial $\eta^2 =.543$. Statistically significant differences were observed between the balance pre and post-tests in the experimental group samples $F(1,64) = 11,899$, $p. 001$, partial $\eta^2 = .157$, (4,59), (1,98).

Statistically significant differences were observed between the agility pre and post-tests

in the experimental group samples $F(1,64) = 16,165$, $p .000$, partial $\eta^2 = .202$, (23,93), (22,55).

Statistically significant differences were observed between the coordination pre and post-tests in the experimental group samples $F(1,64) = 69,806$, $p .000$, partial $\eta^2 = .522$, (47,09), (37,35).



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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

Table 2. Differences Between the Control Group Pre and Post-Tests

Source	Dependent-Variable	Type III Sum of Squares	df	Means		MeanSquare	F	Sig.	Partial Eta Squared
				Pre	Post				
Experimental Group	Balance	11,87	1	4.54	3.69	11,879	,999	,321	,015
	Agility	3,87	1	24.45	23.97	3,874	1,778	,187	,027
	Coordination	186,34	1	49.25	45.89	186,346	4,379	,040	,064
Error	Balance	761,15	64			11,893			
	Agility	139,47	64			2,179			
	Coordination	2723,61	64			42,556			
Total	Balance	1894,00	66						
	Agility	38847,39	66						
	Coordination	152288,31	66						
Wilks' Lambda of the pre-test and post-test		F	df			Error df	Sig.	Value	
		1.721 ^b	3,0			62,00	.172	.923	.077

****p< 0.00, *p< 0.05**

When Table 2 is examined, Wilk's $\Lambda = .923$, $F(3,62) = 1,721$, $p = .172$, partial $\eta^2 = .077$.

No statistically significant differences were found between the balance pre and post-tests in the control group samples $F(1,64) = ,999$, $p .321$, partial $\eta^2 = .015$, (4,54), (3,69).

No statistically significant differences were found between the agility pre and post-tests in the control group samples $F(1,64) = 1,778$, $p .187$, partial $\eta^2 = .027$, (24,45), (23,97).

No statistically significant differences were found between the coordination pre and post-tests in the control group samples $F(1,64) = 4,379$, $p .040$, partial $\eta^2 = .064$, (49,25), (45,89).

Upon the examination of the tables, statistically significant differences were found between the control and experimental groups regarding the balance, agility and coordination tests.



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DISCUSSION and RESULT

The purpose of this study is to examine the effects of the psychomotor training, which was applied to the 10-11 year old female students 3 times a week (40 min.) during 8 weeks, on the basic motoric skills: coordination, agility and balance.

When the effects of psychomotor training on the balance was taken into consideration, a statistically significant difference was found between pre-test (\bar{x} 4,59) and post-test (\bar{x} 1.98) in the training group (experimental group) ($p < 0.01$). No statistically significant difference was found between the balance pre-test (\bar{x} 4,54) and post-test (\bar{x} 3,69) in the non-training group (control group) ($p < 0.05$). This result reveals that the psychomotor training that was applied improves the balance significantly. The findings show similarities with the results of Şen's study which they conducted with the aim of defining the physical education studies' effects on pre-school children. The results of the study which included the content of the program being prepared as supporting the motor development of the children reveals that the steady long jump, run and dynamic balance performances, the values of the experimental group were found to be high (Şen, 2004:1-112). Similarly, in another conducted study the results revealed that improving the balance skill is performed through psychomo-

tor training and is related to motor skills such as walking, running, jumping, climbing speeding up etc. (Hazar and Taşmektepligil, 2008: 9-12).

When the effect of psychomotor training over the agility is examined, a statistically significant difference was found in the experimental group between the pre-test (\bar{x} 23,93) and post-test (\bar{x} 22,55) ($p < 0.01$). In the control group however, no significant difference was found between the pre-test (\bar{x} 24,45) and post-test (\bar{x} 23,97) results ($p > 0,05$). The findings point out that the training that was applied increases the agility significantly. Performing different and complicated exercises, applied in the form of station, simultaneously and repeatedly is thought to be empowering the brain while affecting the reaction and movement time positively, therefore ensuring the changing of direction and pace to be quicker (Bompa and Haff, 2015: 109; Hazar and Taşmektepligil, 2008: 9-12). Due to the fact that the training program applied in this study also included such exercises, the fact that agility is developed further in the training group may thought to be an expected result.

On the other hand, when the psychomotor training's effects on coordination is examined, a statistically significant difference was found between the pre-test (\bar{x} 47,09) and post-test (\bar{x} 37,35) results in the Coordination



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dination test ($p < 0,01$). In the control group however, no significant difference was found between the pre-test (\bar{x} 49,25) and post-test (\bar{x} 45,89) results ($p > 0,05$). Result shows parallelism with the results of Milaim et al., (2016) study “Examination on the Effect of the Psychomotor Training Program on Certain Basic Motoric Properties in 20-Year-Old Men” ($p = 0.410$, $\bar{x} = 7.26$, agility $p = 0.466$, $\bar{x} = 17.23$), and coordination $p = 0.169$, $\bar{x} = 37.94$, $\bar{x} = 36.99$) (Milaim et al 2016:640-647).

These results reveal that the psychomotor training that was applied ensures the significant development of the coordination skill along the balance and agility skills. This result shows parallelism with the results of Oswald et al., (1996) study “The SIMA-project: effects of 1 year cognitive and psychomotor training on cognitive abilities of the elderly”. Oswald et al., determined that the Coordination skill is related to psychomotor training and the further development is ensured through psychomotor training (Oswald et al., 1996: 67-72).

As a result, psychomotor training which includes exercises such as balance walk, shuttle run, plyometric movements, passing under and over obstacles, turns, changes in direction and pace while running, standing in balance positions such as the glider, somersault's and other similar exercises, drastically improves the coordination, balance and agility, which

are from the basic motor skills, in 10-11 year-old female students.

SUGGESTIONS

Psychomotor skills is one of the important subjects in humans life. These skills do not affect the people only in the sportive sense, but also affects the movements of the people in their daily lives, therefore these skills which are earned since the first years of life are considered to be very important (Sheikh, Safania and Afshari, 2011: 1723-1725).

1. Adding more of the age-group appropriate exercises that will develop the basic motor skills of the students beginning from very young ages into the games in preschool, or games and activities in Physical education and sports lessons can be suggested.
2. Exercises developing the coordination, balance and agility skills can be suggested to take a major part in the training programs due to the fact that the development of coordination, balance and agility skills is very effective in reaching the maximum performance in many sports branches.
3. This study can be conducted with male's and people from different age groups.

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(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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International Refereed Academic Journal of Sports, Health and Medical Sciences

October / November / December - Autumn Winter Period Issue: 21 Year: 2016

GEL CODE: I11-J10-M10 ID:317 K:394

ISSN Print: 2146-8508 Online 2147-1711

(ISO 9001-2008 Document No: 12879 & ISO 14001-2004 Document No: 12880)

(TRADEMARK)

(2015/04315- 2015-GE-18972)

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Table 1 indicates

Table 1.results.

Variable / Group

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Ss

F / t

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*Meaningfulness Value

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

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