INVESTIGATION OF ATTENTION AND DECISION-MAKING PROPERTIES IN 11-16 YEARS OLD CHILDREN PLAYING BADMINTON SPORT AS A SPORTIVE RECREATION ACTIVITY*

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Abstract: The aim of this study is to investigate the attention and decision-making characteristics of 11-16 years old children who play Badminton as a sportive recreation activity. In the 2018-2019 academic year, 201 secondary school and high school students with a mean age of 13.18 ± 1.76 studying in different schools in the province of Muğla and engaged in Badminton sport as a recreational recreation activity joined to this survey voluntarily. In addition to the personal information form prepared by the researcher, Bourdon Attention Test (1955) was used to determine attention levels, and Adolescent Decision-Making Scale (EIBS) developed by Mann, Harmoni and Power (1989) was used to determine decision-making skills. Frequency analysis, Kruskal Wallis Test, t test, ANOVA and pearson correlation and regression analysis were used to evaluate the data. As a result, it was found that the level of attention and self-esteem of the students differed significantly according to family income. It is a remarkable finding that students, whose monthly income is low, have high levels of self-esteem. Significant relationship was found between students' sleep time and indifference dimension of decision making. We can say that students who have a short sleep time act unconcerned when they need to decide. We can say that the age, sports age and income level of the students affect the attention level of students. It has been found that attention quality decreases as the indifference and avoidance of responsibility, which are sub-dimensions of decision-making skills, increase.

Key Words: Recreation, badminton, dikkat, karar verme

SPORİF REKREASYON FAALİYETİ OLARAK BADMİNTON SPORUNU YAPAN 11-16 YAŞ ÇOCUKLARDA, DİKKAT VE KARAR VERME ÖZELLİĞİNİN İNCELENMESİ

Öz: Bu araştırmının amacı, sporif rekreasyon faaliyeti olarak badminton sporunu yapan 11-16 yaş çocuklarda, dikkat ve karar verme verimliliğinin incelenmesidir. Araştırımaya, 2018-2019 eğitim öğretim yılında, Muğla ilinde farklı okullarda öğrenim gören, sporif rekreasyon faaliyeti olarak badminton sporu ile uğraşan yaş ortalaması 13.18 ± 1.76 olan, 201 ortaöğretim ve lise öğrencisi katılmıştır. Öğrencilere araştırmacı tarafından hazırlanan kişisel bilgi formu yanında, dikkat düzeylerini belirlemek için Bourdon Dikkat testi (1955), karar verme becerilerini belirlemek için Mann, Harmoni ve Power (1989) tarafından geliştirilen Ergenlerde Karar Verme Ölçüğü (EKVÖ) kullanılmıştır. Verilerin değerlendirilmesinde, frekans analizi, Kruskal Wallis Testi, t testi, ANOVA ve pearson korelasyon analizi kullanılmıştır. Sonuç olarak, öğrencilerin dikkat düzeyi ve özsaygısı düzeyinin aile geliri durumuna göre anlamlı farklılık gösterdiği bulunmuştur. Aylık gelirli düşük olan öğrencilerin özsaygısı düzeyleri yüksek olması dikkat çekici bir bulguydu. Öğrencilerin uyku süreleri ile karar verme becerisi umursamazlık boyutu arasında anlamlı ilişki tespit edilmiştir. Uyku süresi kısa olan öğrencilerin karar vermesi gereken durumlarda umursamaz davranışını söyleyebilirler. Öğrencilerin yaş, spor yaş ve gelir durumunun dikkat düzeyini etkilediğini söyleyebilirler. Karar verme becerisi alt boyutları umursamazlık ve sorumlulukta kaçaña özelliği arttıkça dikkat düzeyinin de azaldığı tespit edilmiştir.

Key Words: Recreation, badminton, attention, decision making

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INTRODUCTION

We can define the psychological functions that consist of attention, thinking, perception and dream in sports as "conscious attention". Attention intensity manifests itself as the ability to provide this conscious movement. Thus, the limited part of perception is directed to our consciousness. Other stimulators are eliminated, which means that they remain unconscious (Göktepe et al., 2016). Attention is a process of conscious focusing on stimulants (Dereceli, 2011). Most of the stimuli in the external world are captured by sensory organs, but some are selected and perceived. The individual cannot deal with all stimulants at the same time because he has limited capacity (Bozan and Akay, 2012). Two important points in maintaining attention; stimulant-related features and features related to the individual (Öztürk, 1995). The lack of concentration and lack of good performance due to the distraction of the athlete's confusion reveals the importance of the attention factor in performance ( Çağlar and Koruç, 2006). The distribution of attention to more than one focal point during activity emerges as one of the important factors affecting performance (Maggil, 2004). Physical activity in children is effective on psychosocial development, supports the development of personality (self-confidence, self-confidence, assertiveness, etc.) and increases attention and concentration (Philipp, 2017). Decision making means choosing one of the different possible actions (Sanchez, et al., 2009). The reaction pattern that the individual exhibits when he/she encounters with a decision-making situation and has become a habit is called decision-making way (Ün, 2010). According to Deniz (2004), individuals use careful, avoidant, delayed and panic decision-making ways in the decision-making process. They will learn the importance of decision making in adolescence and the effective decision making ways of adolescents in this period (Mincemoyer and Perkins, 2003). Reaction time in badminton is an important factor in advanced badminton players where the ball moves rapidly (average speed of 320km/h for elite athletes) (Memedov and Kale, 1994). As with other racquet sports, badminton has short-term maximal or submaximal loads and short-term rest periods. High aerobic capacity is needed in such sports especially for speed, endurance, strength, coordination, reaction, sensing, playing skills and technique (Baron et al., 1992) in order to carry out the movement continuously and rapidly (Faude et al., 2007). Physical activity and sport are important for children's cognitive, mental and spiritual development (Orhan, 2019), and children need to move at least one and a half to two hours each day and young people to move at least one hour (Graf and Klein, 2011; Zahner, 2013). The reasons for participating in the exercise of the students in their free time were investigated and it was stated that the female students who exercised regularly felt better, the male students liked the exercise and they participated in different activities by forming a social environment and developed their level of knowledge and they felt freer while exercising (Popham and Mitchell, 2006). In the study examining the well-being of students, it was found that physical activity performed in free time and positive well-being caused changes (Doğan and Yıldırım, 2006). In the sports environment, being careful, maintaining attention together with appropriate and appropriate decisions are important in terms of positively affecting the game. Careless and wrong decisions or decisions made at the wrong time not only negatively affect the athlete in the game, but also affect the outcome of the game. In the light of this information, the aim of the study is to investigate the attention and decision-making characteristics of 11-16 years old children who play Badminton as a sportive recreation activity.
METHOD

Research Model
The research is a descriptive study in screening model. Screening models are suitable for research aimed at describing a past or present situation as it exists (Karasar, 2004). The research was carried out within the scope of descriptive research methods.

Population-Sample (Research Group)
In the 2018-2019 academic year, 201 middle school and high school students who participated in different schools in Mugla province, who were engaged in Badminton as a sportive recreation activity, had a mean age of 13.18 ± 1.76.

Data Collection Tools
In addition to the personal information form prepared by the researcher, Bourdon Attention Test (1955) was used to determine attention levels, and Adolescent Decision-Making Scale (EIBS) developed by Mann, Harmoni and Power (1989) was used to determine decision-making skills. In the city center of Muğla, students from different schools of Badminton were selected and a research group was formed.

Bourdon Attention Test: The purpose of this test is to measure the level of attention of individuals. Before applying the test, individuals were given the necessary information about the test. Children are given letters arranged in three paragraphs on a page. Each paragraph contains 22 columns, 46210 rows. There are 31 (a), 28 (g), 30 (b) and 28 (d) letters on the leaf prepared for the experiment. A total of 5 minutes is given for the three paragraphs and the individuals will say: “You will underline all the letters a, b, d and g with a pencil. They were said that “When reviewing a line, you will not mark a single letter. You will underline all the letters a, b, d, and g in the line.” At the end of the test, the lines were counted and the test was evaluated. The correct answers given by the children were taken into consideration in the evaluation of the test. Each correct answer was considered a score. The highest score from the test was determined as 117 (Wagner, 1990).

Adolescent Decision-Making Scale: Adolescent Decision-Making Scale was developed by Mann, Harmoni and Power (1989) to determine self-esteem and decision-making ways in decision-making. The scale has 30 items and consists of two parts and 5 sub-scales. These two sections are Self-esteem in Decision Making and Coping Ways in Decision Making. Subscales are “Self-Respect in Decision Making” and “Attention selectivity”, “Panic”, “Avoidance of responsibility” and “Indifference” which measure coping ways used in decision making. Items are graded by marking one of four categories: 3 (Always true to me), 2 (Frequently true to me), 1 (Sometimes true to me) and 0 (Never true to me). In order to test the validity of the Decision-Making Scale in Adolescents adapted to Turkish by Çolakkadıoğlu (2003), validity studies based on construct validity and criteria were conducted. As a result of the factor analysis, the Turkish form was found to be in accordance with the original form (Çolakkadıoğlu and Güçray, 2007).

Data Analysis
Frequency analysis, Kruskal Wallis Test, t test, ANOVA and pearson correlation and regression analysis were used to evaluate the data.
RESULTS

Table 1. Demographic information table of the students participating in the research

| Variable               | Group          | n   | %   |
|------------------------|----------------|-----|-----|
| Gender                 | Female         | 117 | 58.2|
|                        | Male           | 84  | 41.8|
| Age                    | 11-12          | 100 | 49.7|
|                        | 13-14          | 28  | 14  |
|                        | 15-16          | 73  | 36.9|
| Level of income        | Less than 2000 tl | 25  | 12.4|
|                        | 3000 tl-5000 tl | 139 | 69.2|
|                        | Above 5000 tl  | 37  | 18.4|
| Sleep duration         | 6-7 hours      | 76  | 37.8|
|                        | 8 hours        | 73  | 36.3|
|                        | Over 9 hours   | 52  | 25.9|
| Leisure time activity  | Games or other activities | 108 | 53.7|
|                        | Smartphone / Internet | 27  | 13.4|
|                        | Book           | 50  | 24.9|
|                        | Music          | 16  | 8.0 |
| Total                  |                | 201 | 100 |

As can be seen in Table 1, 58.2% of the students were female and 41.8% were male. The distribution of age group was 49.7% for 11-12 years, 14% for 13-14 years and 36.9% for 15-16 years. The income level is 12.4% at 2000 TL and below (low income), 69.2% at 3000 tl-5000tl (middle income), and 18.4% at 5000tl and above (high income). Sleep duration distribution: 6-7 hours 37.8%, 8 hours 36.3%, 9 hours 25.9% and leisure time activity distribution: 53.7% of games or other activities, 13.4% of smartphone / internet, 24.9% of reading books, 8% of listening to music.

Table 2. Examining the attention and decision-making sub-dimensions of students engaged in badminton sports according to the age variable

ANOVA

| Sum of squares | df  | Average of squares | F    | Sig  |
|----------------|-----|--------------------|------|------|
| Attention      |     |                    |      |      |
| Inter-group    | 6996,138 | 6                 | 1166,023 | 4,038 | .001 |
| Intra-group    | 56019,782 | 194                | 288,762 |      |      |
| Total          | 63015,920 | 200                |      |      |      |
| Self-esteem sum |     |                    |      |      |
| Inter-group    | 67,467 | 6                  | 11,244 | 1,130 | .346 |
| Intra-group    | 1930,543 | 194                | 9,951  |      |      |
| Total          | 1998,010 | 200                |      |      |      |
| Indifference sum |     |                    |      |      |
| Inter-group    | 95,073 | 6                  | 15,846 | 1,096 | .366 |
| Intra-group    | 2803,594 | 194                | 14,452 |      |      |
| Total          | 2898,667 | 200                |      |      |      |
| Avoidance of responsibility sum |     |                    |      |      |
| Inter-group    | 238,377 | 6                  | 39,729 | 2,876 | .010 |
| Intra-group    | 2679,832 | 194                | 13,814 |      |      |
| Total          | 2918,209 | 200                |      |      |      |
| Attention selectivity sum |     |                    |      |      |
| Inter-group    | 174,975 | 6                  | 29,163 | 2,112 | .054 |
| Intra-group    | 2678,497 | 194                | 13,807 |      |      |
| Total          | 2853,473 | 200                |      |      |      |
| Panic sum      |     |                    |      |      |
| Inter-group    | 95,670 | 6                  | 15,945 | 1,127 | .348 |
| Intra-group    | 2745,594 | 194                | 14,153 |      |      |
| Total          | 2841,264 | 200                |      |      |      |

As it is seen in Table 2, there was a significant difference between attention level and decision-making skill responsibility subscale and age variable of students engaged in Badminton sport.
(p <0.05). The mean attention level of children aged 12 is higher than children aged 15 years. When we look at the total score of responsibility, the mean scores of the 12-year-old participants is lower than the 16-year-old participants. We can say that the sense of responsibility increases while the age increases.

Table 3. Examining the attention and decision-making sub-dimensions of students engaged in Badminton sports according to the gender variable

| Gender | n   | X     | s     | t     | p    |
|--------|-----|-------|-------|-------|------|
| Female | 117 | 69.85 | 17.19 | 1.768 | .079 |
| Male   | 84  | 65.38 | 18.28 |       |      |

**Decision making skills sub-dimensions**

| Gender | n   | X     | s     | F     | Sig. |
|--------|-----|-------|-------|-------|------|
| Female | 117 | 11.51 | 3.11  | 1427,589 | .010 |
| Male   | 84  | 12.11 | 3.20  | 303,842 |      |

As it is seen in Table 3, there was no significant difference between attention level and decision-making skill sub-dimensions and gender variable of students engaged in Badminton sport (p>0.05). According to the mean values, the attention level of female students was found to be higher than the attention level of male students. It was determined that male students engaged in badminton sport had higher mean in decision-making than self-esteem, indifference from decision-making ways, avoidance of responsibility, attention selectivity and panic.

Table 4. Examining the attention and decision-making sub-dimensions of students engaged in Badminton sports according to the family income level variable

| Source of Diversity | Attention | Decision making skills sub-dimensions |
|---------------------|-----------|---------------------------------------|
|                      | Sum of squares | Average of squares | F    | Sig. | Source of Diversity |
| Inter-group         | 2855,178   | 1427,589               | 4.698 | .010 | 2-3                  |
| Intra-group         | 60160,743  | 303,842                |       |      |                      |
| Total               | 63015,920  |                       |       |      |                      |

**Self-esteem**

| Inter-group | 66,521 | 33,260 | 3.410 | .035 |
| Intra-group | 1931,489 | 9,755 |       |      |
| Total       | 1998,010 | 14,637 |       |      |

**Indifference**

| Inter-group | .540  | .270  | .018  | .982 |
| Intra-group | 2898,127 | 14,637 |       |      |
| Total       | 2898,667 | 14,637 |       |      |

**Avoidance of responsibility**

| Inter-group | 5,568  | 2,784  | .189  | .828 |
| Intra-group | 2912,641 | 14,710 |       |      |
| Total       | 2918,209 | 14,710 |       |      |

**Vigilance**

| Inter-group | 29,511  | 14,755  | 1.035 | .357 |
| Intra-group | 2823,962 | 14,262  |       |      |
| Total       | 2853,473 | 14,262  |       |      |

**Panic**

| Inter-group | 10,359  | 5,180  | .362  | .697 |
| Intra-group | 2830,905 | 14,297  |       |      |
| Total       | 2841,264 | 14,297  |       |      |
As seen in Table 4, a significant difference was found between family income level and attention level (p <0.05). The mean scores of the students whose family income level is 3000 tl-5000 tl is found to be higher than the students with income level above 5000 tl. There was a significant difference between family income level and self-esteem of decision-making sub-dimension (p <0.05). Self-esteem levels of students whose family income level is 2000 tl or less are higher than those whose income level is 5000 tl and above. It is a remarkable finding that the self-esteem levels of the students whose families have low monthly income are high. No significant difference was found between the coping ways of decision making, indifference, avoidance of responsibility, vigilance and panic subscales and monthly income of the family (p > 0.05).

Table 5. Examining the attention and decision-making sub-dimensions of students engaged in Badminton sports according to the sleep duration variable

| Source of Diversity | Sum of squares | df | Average of squares | F   | P    |
|---------------------|---------------|----|--------------------|-----|------|
| **Attention level** |               |    |                    |     |      |
| Inter-group         | 1207,139      | 3  | 402,380            | 1.282| .282 |
| Intra-group         | 61808,781     | 197| 313,750            |     |      |
| Total               | 63015,920     | 200|                    |     |      |
| **Decision making skills sub-dimensions** | | | | | |
| **Self-esteem**     |               |    |                    |     |      |
| Inter-group         | 17,722        | 3  | 5,907              | .588| .624 |
| Intra-group         | 1980,288      | 197| 10,052             |     |      |
| Total               | 1998,010      | 200|                    |     |      |
| **Indifference**    |               |    |                    |     |      |
| Inter-group         | 180,949       | 3  | 60,316             | 4.372| .005 |
| Intra-group         | 2717,717      | 197| 13,796             | 1-2,1-3,1-4 |
| Total               | 2898,667      | 200|                    |     |      |
| **Avoidance of responsibility** | | | | | |
| Inter-group         | 104,508       | 3  | 34,836             | 2.439| .066 |
| Intra-group         | 2813,701      | 197| 14,283             |     |      |
| Total               | 2918,209      | 200|                    |     |      |
| **Vigilance**       |               |    |                    |     |      |
| Inter-group         | 85,067        | 3  | 28,356             | 2.018| .113 |
| Intra-group         | 2768,405      | 197| 14,053             |     |      |
| Total               | 2853,473      | 200|                    |     |      |
| **Panic**           |               |    |                    |     |      |
| Inter-group         | 32,650        | 3  | 10,883             | .763| .516 |
| Intra-group         | 2808,613      | 197| 14,257             |     |      |
| Total               | 2841,264      | 200|                    |     |      |

As shown in Table 5, no significant difference was found between the duration of sleep and attention level of the students engaged in Badminton sports (p > 0.05). Significant differences were found between students’ sleep duration time and indifference from decision-making sub-dimensions (p <0.05). It was found that the mean indifference scores of the students who sleep daily 6 hours were higher than those who sleep daily 7,8 or 9 hours. We can say that students who have a short sleep duration act as if there is no decision to make.
As can be seen in Table 6, a significant negative correlation was found between the attention level and age, sports age, income, indifference and avoidance of responsibility of the students engaged in Badminton sports. We can say that as the age, sports age and family income level of the students increase, the level of indifference and avoidance of responsibility increases but attention level decreases. A negative correlation was found between the age variable and self-esteem and vigilance levels of the students. There is a significant positive relationship between age variable and avoidan ce of responsibility variable. Self-esteem and vigilance of the participants have decreased while age increased. We can say that as students’ age increase, their level of avoidance of responsibility increases. A significant positive correlation was found between the students’ sleep duration variable and attention levels. As the duration of sleep increases, it is seen that vigilance scores increase. We can say that students with sufficient sleep should carefully investigate a range of alternatives and evaluate the positive and negative aspects of the alternatives.

**DISCUSSION AND CONCLUSION**

In the study where the attention and decision-making characteristics of 10-17 years old children engaged in Badminton as a recreation activity were examined:

|                  | Age       | Sport age | Income | Sleep | Self-esteem | Indifference | Avoidance of responsibility | Vigilance |
|------------------|-----------|-----------|--------|-------|-------------|--------------|-------------------------------|-----------|
| **Attention level** | R         | -.212**   | -.211**| -.155' | .089        |              |                               |           |
|                  | P         | .002      | .003   | .028  | .207        |              |                               |           |
|                  | N         | 201       | 201    | 201   | 201         |              |                               |           |
| **Self-esteem**   | R         | -.169'    | -.026  | -.178' | .059        |              |                               |           |
|                  | P         | .017      | .712   | .012  | .403        |              |                               |           |
|                  | N         | 201       | 201    | 201   | 201         |              |                               |           |
| **Indifference**  | R         | .134      | .124   | -.012 | -.120       | -.355**      |                               |           |
|                  | P         | .057      | .079   | .867  | .090        | .000         |                               |           |
|                  | N         | 201       | 201    | 201   | 201         | 201          |                               |           |
| **Avoidance of responsibility** | R         | .256**    | .099   | .030  | -.114       | -.381**      | .646**                        |           |
|                  | P         | .000      | .163   | .672  | .108        | .000         | .000                          |           |
|                  | N         | 201       | 201    | 201   | 201         | 201          | 201                           |           |
| **Vigilance**     | R         | -.235**   | -.013  | -.085 | .141        | .485**       | -.268**                       | -.383**   |
|                  | P         | .001      | .852   | .228  | .046        | .000         | .000                          | .000      |
|                  | N         | 201       | 201    | 201   | 201         | 201          | 201                           | 201       |
| **Panic**         | R         | .064      | .079   | -.020 | -.075       | -.313**      | .498**                        | .411**    |
|                  | P         | .369      | .267   | .775  | .287        | .000         | .000                          | .282      |
|                  | N         | 201       | 201    | 201   | 201         | 201          | 201                           | 201       |
There was a significant difference between attention level and decision-making skill responsibility subscale and age variable of students engaged in Badminton sport. The mean attention level of children aged 12 is higher than children aged 15 years. When we look at the total score of responsibility, the mean scores of the 12-year-old participants is lower than the 16-year-old participants. We can say that the sense of responsibility increases while the age increases (Table 2). In the study, whether the fencing sport affects attention levels in children between 10-12 years of age, it was found that 10-12 age group children doing fencing sport had better attention levels than those who did not (Kartal et al., 2016). A relationship was found between golf exercises and attention in children aged 14-15 and it was found that attention level improved in the children play golf (Tunç et al., 2014). In the study where the relationship between imagination and attention was examined in elite Badminton athletes in the 16-18 age group, a significant relationship was found between attention level and imagery in Badminton athletes, and it was found that regular badminton trainings improved attention and imagery (Bastug et al., 2017). Soccer exercise and mental training were applied to 10-12-year-old children for 12 weeks, and It was found that attention was developed in children (Bastug et al., 2015). There was no significant difference between attention level and decision-making skill sub-dimensions and gender variable of students who are engaged in Badminton. It was determined that male students engaged in Badminton sport had a higher average in self-esteem in decision-making and indifference, avoidance of responsibility, vigilance and panic dimensions from decision-making way than female students (Table 3). In a study in which adolescents’ decision-making styles were examined according to gender, grade level and school type, it was found that male participants used self-esteem, indifference and avoidance of responsibility styles more often than girls in decision-making (Mercan, 2019).In the study which examined the effect of playing education on the attention and concentration levels of sedentary children, it was found that the attention level of male and female students to be very close to each other (Orhan and Ayan, 2018).Similarly, there are studies that found that gender factor had no effect on attention(Gordon et al., 1997; Karaduman, 2004; Göktepe et al., 2016). In the study conducted to determine the decision-making ways of the athletes, no statistically significant difference was found in the decision-making ways in terms of gender and sports experience (Keleceek et al., 2013). According to the results of the study, self-esteem and decision-making ways of university students were examined, it was found that there was no significant difference between the gender and mean scores of self-esteem in decision making and sub-dimensions of decision making ways (careful decision making, avoiding decision making, delaying decision making and panic decision making) (Avsaroglu and Üre, 2007). There are studies where there is no difference between the decision-making ways of women and men (Cetin, 2009; Schuller, 2010; Salo and Allwood, 2011). A significant difference was found between family income level and attention level. The mean scores of the students whose family income level is 3000 tl-5000 tl is found to be higher than the students with income level above 5000 tl. There was a significant difference between family income level and self-esteem of decision-making sub-dimension. Self-esteem levels of students whose family income level is 2000 tl or less are higher than those whose income level is 5000 tl and above. It is a remarkable finding that the self-esteem levels of the students whose families have low monthly income are high. No significant difference was found between the coping ways of decision making, indifference, avoidance of responsibility, vigilance and panic subscales and monthly income of the family (Table 5). In this study where the decision-making ways of university students were examined, students have high levels of self-esteem in decision-making as well as the score of careful decision-making ways is higher than other decision-making ways. Gender, class, income level of the family, the place where family lives, family structure, the educational status of the parents and the status of the parents did not differ significantly in terms of level of significance. was concluded that the monthly personal expenditure variable had a significant
difference in self-esteem levels in decision making (Ulaş et al., 2015). When the income level was compared, a significant difference was found in the values of the subjects in the experimental group (Tuğ, 2013). It was seen that those with income level of 1000-2000 TL / month had 30% less attention than those with income less than 1000 TL (Adsız, 2010). These findings verify our study. A negative correlation was found between the attention level of the students engaged in Badminton sport and age, sport age, income, indifference and avoidance of responsibility. We can say that as the age, sports age and family income level of the student’s increase, the level of indifference and avoidance of responsibility increases but attention level decreases. A negative correlation was found between the age variable and self-esteem and vigilance levels of the students. There is a significant positive relationship between age variable and avoidance of responsibility variable. Self-esteem and vigilance of the participants decreased while the age increased. We can say that as students’ age increases, their level of avoidance of responsibility increases. A significant positive correlation was found between the students' sleep duration variable and vigilance levels. As the duration of sleep increases, it is seen that vigilance scores increase. We can say that students with sufficient sleep should carefully investigate a range of alternatives and evaluate the positive and negative aspects of the alternatives. According to the results of the analysis made to compare the decision-making ways according to the sport year, it was seen that the decision-making ways did not differ according to the sport year (Kelecek et al., 2015). There are many studies on attention development and decision-making skills related to physical activity in children. It has been determined that the training and practices carried out about attention will increase the concentration performance value (Culbertson and Sari, 1997; Yaycı, 2007). In the study, which examined the effect of sports on attention with primary school students, significant increases in the attention level of the students were found (Adsız, 2010). In the study conducted to investigate the attention levels of children doing table tennis exercises, it was found that table tennis exercises had a positive effect on attention characteristics in children aged 9-13 years (Aşan, 2011). In the study, whether the fencing sport affects attention levels in children between 10-12 years of age, it was found that 10-12 age group children doing fencing sport had better attention levels than those who did not (Akandere et al., 2010; Kartal et al., 2016). It was found out that 8-week educational games increased the attention level of children positively. In the study conducted on children between the ages of 8-12 and the effect of folklore on attention, the level was examined. They found that physical activity had a positive effect on reducing attention deficit after 15 weeks (Topcu et al., 2007).Sanchez et al., (2009) ‘s basketball players and Craig and Watson (2011)’ s rugby players in the study of decision-making ways, It was determined that athletes generally use careful decision-making way and they prefer delaying decision-making way lesser. In the study named "Investigation of the effect of regular sports on attention in primary school students", according to the findings of primary school students, 83% of the students who do sports are more careful than those who do not do sports (Adsız, 2010). In the study conducted with the aim of examining the attention levels of the students engaged in golf sport, it has been observed that golf exercises positively affect attention characteristics in children aged 14-15 years (Tuğ, 2013). In the study on the construct validity of d2 attention test by Çağılar and Koruç (2006), It was found that TM, TM-H (total processed substance-errors) concentration and attention scores changed according to age variable and attention scores increased while the age increased. It was found that students' perceptions about decision making ways showed statistically significant difference according to age (Akay, 2018). In the study where attention, mental endurance and concentration levels of tennis, table tennis and Badminton athletes were examined, it was determined that the attention level of Badminton athletes was higher than tennis and table tennis athletes (Bastug, 2018). Bastug and Dikici (2019) found that, significant difference was found in leisure satisfaction level, balance and attention levels of the students who spent active time by participating in free time games and activities (experimental group).
It is thought that the games and activities on campus contribute positively to the psychological and physical health of the students. The results of this research verify our study. As a result, it was found that attention and decision-making skills did not show significant differences in gender variable in the children participating in the research. It was found that attention and decision-making skills showed significant differences depending on age and family income level variables. It is seen that the students whose families have medium income level have a high level of attention. Significant differences were found between family income level and self-esteem of decision-making sub-dimension. The level of self-esteem of the students with low family income was found to be high. There was a negative correlation between attention level of children and age, sports age, income, indifference and avoidance of responsibility. We can say that as the age, sports age and family income level of the student’s increase, the level of indifference and avoidance of responsibility increases but attention level decreases. A negative correlation was found between the age variable and self-esteem and vigilance levels of the students. There is a significant positive relationship between the age variable and the avoidance of responsibility variable. Self-esteem and vigilance of the participants decreased while the age increased. It is recommended to promote badminton in schools. Sportive recreation activities should ensure that students spend active time.

REFERENCES

Adsız E. (2010). İlköğretim çağındaki öğrencilerde düzenli yapılan sporun dikkat üzerine etkisinin araştırılması. Ege Üniversitesi Sağlık Bilimleri Enstitüsü, Beden Eğitimi ve Spor Anabilim Dalı, Yüksek Lisans Tezi, İzmir.

Akandere M., Baştuğ G., Aşan R., Baştuğ K. (2010). The effect of educational game over attention in children. Of 10th International Scientific Conference Perspectives in Physical Education and Sport, Ovidius University of Constanța Faculty of Physical Education and Sport, 21-23 May. Constanța, România, 22.

Akça Ö.Ş. (2019). Examining the relationship between the thinking styles and some demographical variables of the students receiving professional music education. Kastamonu Education Journal, 27 (2), 683-700. doi: 10.24106/kefdergi.2687

Aşan R. (2011). The effect of eight-week table tennis exercise related to the attention among 9–13 aged children. Selçuk Üniversitesi, Sağlık bilimleri enstitüsü, Yüksek Lisans Tezi, Konya.

Avşaroğlu S., Üre Ö. (2007). Üniversite öğrencilerinin karar vermede özsaygı, karar verme ve stresle başa çıkma stillerinin benilık saygı ve bazı değişikenler açısından incelenmesi. Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 18, 85-100.

Baron R, Petschnig R, Bachl N, Raberger G, Smekal G, Kastner P. (1992). Catecholamine excretion and heart rate as factors of psychophysical stress in table tennis. Int J Sports Med, 13(7), 501-5. doi:10.1055/s-2007-1021306

Baştug G., Mollaogullari H., Goral K., Kocacan S.A. (2015). Investigation of the effect of mental training method on balance and attention of 10-12 years old football players. UHPPD, International Journal of Psychiatry and Psychological Researches, 4,167-176.

Baştug G., Ağlıönü A., Balkan N. (2017). A study of attention and imagery capacities in badminton players. Turkish Journal of Sport and Exercise, 19 (2), 307-312. doi: 10.15314/tsed.325694

Baştug G. (2018). Investigation of attention, concentration and mental toughness properties in tennis, table tennis, and badminton athletes. The Sport Journal, 21, Jul-3, 1-7.

Baştug, G., Dikici, İ. (2019). Üniversite öğrencilerein kampüs içinde serbest zaman tatmin düzeylerinin incelenmesi. Journal of Recreation and Tourism Research /JRTR, 6(4), 351-359. doi: 10.31771/jrtr.2019.37

Craig C., Watson G. (2011). An affordance based on approach to decision making in sport: discussing a novel methodological framework. Revista de Psicologia del Deporte, 20(2), 689-708.

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Çağlar E., Koruç Z. (2006). D2 Dikkat testinin sporcudarda güvenirliği ve geçerliği. Spor Bilimleri Dergisi, 17(2), 58-80.

Çetin M.C. (2009). Beden eğitimi ve spor yüksekokulu öğrencilere karar verme stillerini, sosyal beceri düzeylerini ve stresle başa çıkma biçimlerini bazı değişkenler açısından karşılaştırmalar olarak incelemesi. Doktora Tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü.

Çolakkadıoğlu O. (2003). Ergenlerde karar verme ölçeğinin uyarlanması çalışması. Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü, Yüksek lisans Tezi, Adana.

Çolakkadıoğlu O., Güçray S.S. (2007). Ergenlerde Karar Verme Ölçeği'ni Türkçe'ye uyarlama çalışması. Eğitim Araştırmaları Dergisi, 26, 61-71.

Dereceli Ç. (2011). Tai Chi programına katılımın dikkat eksikliği ve hiperaktivite bozukluğu olan 1. kademe öğrencilerinin iç- dış denetim odağı ve dikkat düzeylerine etkisinin araştırılması. Doktora Tezi, Ege Üniversitesi Sağlık Bilimleri Enstitüsü, İzmir.

Doğan T., Yıldırım İ. (2006). Üniversiteli öğrencilerin iyilik halinin arkadaşlık ve sevgi boyutlarının incelemesi. Eğitim Araştırmaları, 24, 77-86.

Faude O., Meyer T., Rosenberger F., Fries M., Huber G., Kindermann W. (2007). Physiological characteristics of badminton match play. Eur J Appl Physiol, 100, 479–485. doi:10.1007/s00421-006-0352-9

Göktepe M., Akalın C.T., Göktepe M.M. (2016). Kayak sporu yapan çocukların dikkat düzeylerinin incelemesi. International Journal of Science Culture and Sport, 4(3), 724. doi: 10.14486/intjacs620

Graf C., Klein D. (2011). Bewegung bei vorschulkindern: empfehlungen und wirklichkeit. Journal für Klinische Endokrinologie und Stoffwechsel, 4(2), 16-20.

Gordon A.D., Montenegro L., Culbertson W., Zillmerb E.A. (1997).  A normative study of the d2 test with american adults. Arch Clin Neuropsychol, 12(4), 325. doi: 10.1080/101080

Karaduman B.D. (2004). Dikkat Toplama Eğitim Programının İlköğretim 4. ve 5. Sınıf Öğrencilerinin Dikkat Toplama Düzeyi, Benlik Algısı ve Başarı Düzeylerine Etkisi. Doktora Tezi, Ankara Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.

Karasar N. (2004). Bilimsel Araştırma Yöntemi. Ankara: Nobel Yayıncılık.

Kartal R., Dereceli Ç., Karatal A. (2016). Eskrim sporu yapan ve yapmayan 10-12 yaş arası çocukların dikkat düzeylerinin incelemesi. Spor ve Eğitim Bilimleri Dergisi, 3(2), 82-88.

Kelecek S., Altuntaş A., Aşçı F.H. (2015). Determinations of athletes’ decision-making styles. CBU Journal of Physical Education and Sport Sciences, 8(1), 21-27.

Maggil R.A. (2004). Motor learning and control: Concepts and applications. Mc Graw Hill, Boston.

Mann L., Harmon R., Power C. (1989). Adolescent decision-making: The development of competence. Journal of Adolescence, 12, 265-278. doi: 10.1016/0140-1971(89)90077-8

Memedov R.C., Kale R. (1994). Uçan tıy top badminton. Başak Ofset, İstanbul.

Mincemoyer C.C., Perkins D.F. (2003). Assessing decision-making skills of youth. Family and Consumer Sciences, 8 (1), 1-9.
Orhan R., Ayan S. (2018). Psiko-motor ve gelişim kuramları açısından spor pedagojisi. *Kırıkkale Üniversitesi Sosyal Bilimler Dergisi*, 2(8), 523-540.

Orhan R. (2019). The importance of physical activity and sports in child development. *Kırıkkale University Journal of Social Sciences*, 9(1), 157-176.

Öztürk B. (1995). *Genel öğrenme stratejilerinin öğrencilere uygulanma durumları*. Doktora Tezi, Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Philipp T. (2017). Bewegungsentwicklung und -förderung im Kindesalter - im Speziellen in Kinderbildungs- und -betreuungseinrichtungen. [https://www.eltern-bildung.at/experteninnenstimmen/bewegungsentwicklung-und-foerderung-im-kindesalter](https://www.eltern-bildung.at/experteninnenstimmen/bewegungsentwicklung-und-foerderung-im-kindesalter). Erişim Tarihi: 19.10.2018.

Popham F., Mitchell R. (2006). Leisure time exercise and personal circumstances in the working age population: longitudinal analysis of the British household panel survey. *J Epidemiol Community Health*, 60, 270–274. doi:10.1136/jech.2005.041194

Salo I., Allwood C.M. (2011). Decision-making styles, stres and gender among investigators. *An International Journal of Police Strategies & Management*, 34(1), 97-119

Sancez A. C. J., Calvo A.L., Bunuel P.S., Godoy S.J.I. (2009). Decision-making of spanish female basketball team players while they are competing. *Revista de Psicología del Deporte*, 18, 369-373.

Schuller I. (2010). Decision-making under time pressure regard to preferred cognitive style (Analytical-Intuitive) and study orientation. *Studia Psychologica*, 52(4), 285-290. doi:10.1016/j.obhdp.2012.03.005

Topçu B., Yıldız S., Bilgen Z.T. (2007). Dikkat eksikliği hiperaktivite bozukluğu olan çocuklarda folklor egzersizinin etkisi. *Genel Tip Dergisi*, 17, 89-93.

Tunç A. (2013). Golf sporu yapan çocukların dikkat düzeylerinin incelenmesi. Yüksek Lisans Tezi, Selçuk Üniversitesi. Sağlık Bilimleri Enstitüsü, Beden Eğitim ve Spor Anabilim Dalı, Konya.

Tunç A., Akandere M. Baştug G. (2014). The analysis of the attention levels of individuals playing golf. *Turk J Sport Exe*, 16(1), 104-115. doi:10.15314/tjse.201416171

Ulaş H.A., Epçalan C., Epçalan C., Koçak B. (2015). Examining self-respect level of pre-service teachers in decision-making and their decisionmaking modes. *Turkish Studies International Periodical for The Languages, Literature and History of Turkish*, 10(3), 1031-1052.

Ün E. (2010). Satranç eğitiminin, problem çözme yaklaşımları, karar verme ve düşünme stillerine etkisinin incelenmesi. Selçuk Üniversitesi, Eğitim Bilimleri Enstitüsü, Beden Eğitim ve Spor Anabilim Dalı, Konya.

Wagner H. L. (1990). The Spontaneous facial expressions of differential positive and negative emotions. *Motivations and Emotions*, 14(1), 27-43. doi:10.1007/bf00995547

Zahner L., TW-Team. (2013). Bedeutung von sport und bewegung für die entwicklung von kindern und jugendlichen. Institut für Sport und Sportwissenschaften, Universität Basel.