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Determining the Cognitive Physical Activity and Sports Commitment Status of Students Participating in Interuniversity Sports Competitions

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ABSTRACT

Purpose: The objective of this research is to investigate the cognitive physical activity and sports commitment levels of students competing in interuniversity sports events. Materials and Methods: The research group includes 102 male and 45 female university students. The "Cognitive Behavioral Physical Activity Scale" and the "Athlete Commitment Scale" were employed as data gathering tools in the study to measure students' cognitive physical activity levels and commitment levels, respectively.

Findings: The study indicated that students' "Cognitive Behavioral Physical Activity Scale" scores showed a significant difference according to gender ($p<0.05$); It was determined that the "Athlete Commitment Scale" scores did not show a significant difference ($p>0.05$). While it was determined that the "Cognitive Behavioral Physical Activity Scale" scores of the students did not show a significant difference according to the age variable ($p>0.05$); It was determined that the "Athlete Commitment Scale" scores showed a significant difference ($p<0.05$). No significant relationship was found between the duration of sports experience of the students and their "Cognitive Behavioral Physical Activity Scale" and "Athlete Commitment Scale" scores ($p>0.05$).

Conclusion: Students engaging in interuniversity sports contests may have varying levels of cognitive physical activity and sports dedication based on their gender and age.

INTRODUCTION

Universities, which are an essential component of modern education systems, seek to contribute to students' social and physical development as well as their intellectual growth. University life not only provides students with academic information, but also with numerous possibilities to improve their personal competencies, social skills, and physical health. However, interuniversity sports tournaments are crucial events that improve students' involvement in sports and contribute to their cognitive, physical, and emotional development (1,2).

Sports have been shown to have positive effects on cognitive and psychological health, in addition to the physical benefits they provide. Physical activity lowers students' stress levels, improves their concentration and academic performance, and promotes the development of social skills like self-discipline and teamwork (3). The beneficial benefits of regular exercise on brain processes, as well as its protective features for mental health, demonstrate the importance of sports not only for physical but also mental health. Physical activity protects against mood disorders including depression and anxiety by modulating neurotransmitter levels in the brain. Furthermore, physical activity is known to boost brain plasticity and contribute to improved cognitive capabilities (4,5).

Similarly, involvement in athletic events appears to have a major impact on students' overall health and quality of life. Students that participate in sports events have higher energy levels, better sleep habits, and a stronger immune system, despite their hectic academic schedule. Participating in sports activities also allows students to broaden their social networks, make new acquaintances, and increase their sense of belonging. These social connections help students adjust to university life and improve their psychological resilience (6).

Intercollegiate sports contests allow students to compete against their classmates from other colleges and demonstrate their talents. These events boost students' confidence and allow them to express themselves more effectively. Winning and losing in a competitive atmosphere help pupils build their emotional intelligence and stress management skills. Sports competitions also help to teach lifelong skills including discipline, time management, and goal setting (7).

Participation in sports events has significant effects on both physical health and intellectual performance. According to studies, students who participate in sports have higher academic results and perform better than those who do not. This is because sports improve pupils' mental clarity, which helps them learn more effectively. Furthermore, sporting activities allow students to make better use of their time and maintain a balanced lifestyle through extracurricular activities (8, 9). The focus of this study is to assess the cognitive, physical activity, and sports commitment levels of students competing in interuniversity sports events, as well as to investigate the correlations between these factors. The study's findings may help university administrations and sports instructors devise tactics to attract students to participate in sporting events. Furthermore, the information gathered can help to develop policies that boost university students' motivation and involvement in sports.

Method

The research group consisted of 147 (102 male, 45 female) volunteer students competing in interuniversity sports events. Scale was recommended as a data collection tool. The data collection tool used in the study is divided into two parts: the "Personal Information Form" in the first part, and the "Cognitive Behavioral Physical Activity Scale" in the second part, which was used to determine the students' cognitive physical activity levels and the "Athlete Commitment Scale" to determine their commitment levels.

Data Collection Tools

Cognitive Behaviorist Physical Activity Scale

The study involved 147 (102 male, 45 female) volunteer students who participated in interuniversity sports tournaments. Scale was chosen as the data collection method. The data collection tool used in the research is divided into two parts: the "Personal Information Form" in the first part, and the "Cognitive Behavioral Physical Activity Scale" in the second part, which was used to determine the students' cognitive physical activity levels and the "Athlete Commitment Scale" to determine the students' commitment levels.

Athlete Commitment Scale

The Athlete Commitment Scale, developed by Lonsdale et al., (2007) and adapted to Turkish by Kelecek et al., (2018), consists of 16 items with 5-point Likert 4 sub-dimensions (Confidence, Dedication, Vigor, Enthusiasm) and is the most comprehensive scale that can be taken from the scale. The lowest score was determined as 16 and the highest score was 80 (Lonsdale et al., 2007; Kelecek et al., 2018).

Findings

Table 1. Skewness and Kurtosis Values for the Scales

Scales	Mean±Sd	Skewness	Kurtosis
Result Expectation	19,97±3,06	,352	-1,164
Self Regulation	20,69±3,21	-,028	-1,170
Personal Disabilities	17,96±3,82	,465	-,730
Cognitive Behaviorist Physical Activity Scale	56,23±10,75	-,155	,787
Trust	16,92±2,28	-,591	,594
Devotedness	15,66±3,50	-,554	-,702
Vigorousness	17,48±2,99	-1,961	-2,151
Enthusiasm	17,27±3,31	-1,530	-2,272
Athlete Commitment Scale	67,12±9,69	-1,347	-2,268

In Table 1, it was determined that the skewness and kurtosis values of both scales were in the range of -3>….<+3, and it was concluded that the data was suitable for normal distribution.

Table 2. Demographic Information of the Research Group

		Frequency	Percentage (%)
Gender	Male	102	69,4
	Female	45	30,6
Age	20-23 years old	48	32,7
	24-27 years old	55	37,4
	28 years old and over	44	29,9
Height	150-160 cm	25	17,0
	161-170 cm	30	20,4

	171-180 cm	36	24,5
	181-190 cm	32	21,8
	191 cm and over	24	16,3
Body Weight	60-70 kg	32	21,8
	71-80 kg	36	24,5
	81-90 kg	55	37,4
	91 kg and over	24	16,3
Year of Sports	1-5 years	31	21,1
	6-11 years	72	49,0
	12 years and over	44	29,9

When Table 2 is examined, 69.4% of the research group is male, 30.6% is female, 37.4% is 24-27 years old, 32.7% is 20-23, 29.9% is 28 years old. age or above, 24.5% were 171-180 cm, 21.8% were 181-190 cm, 20.4% were 161-170 cm, 17% were 150-160 cm, 16%, It was observed that 3 of them were 191 cm and above tall. 37.4% of the research group had a body weight of 81-90 kg, 24.5% had a body weight of 71-80 kg, 21.8% had a body weight of 60-70 kg, and 16.3% had a body weight of 91 kg and above. It was determined that 49 of them had been doing sports for 6-11 years, 29.9% for 12 years or more, and 21.1% for 1-5 years.

Table 3. t Test Analyzes According to the Gender Variable of the Research Group

		Gender			
		$\overline{X}$	**sd**	**t**	**p**
Result Expectation	Male	20,29	3,09	1,403	0,16
	Female	19,53	2,88		
Self Regulation	Male	20,84	3,26	1,150	0,25
	Female	20,17	3,14		
Personal Disabilities	Male	18,45	3,74	1,790	0,07
	Female	17,24	3,82		
Cognitive Behaviorist Physical Activity Scale	Male	59,58	8,71	1,694	0,09
	Female	56,95	8,61		
Trust	Male	16,75	2,32	,381	0,70
	Female	16,60	2,13		
Devotedness	Male	15,53	3,61	,120	0,90
	Female	15,45	3,28		
Vigorousness	Male	17,04	3,21	-,329	0,74
	Female	17,22	2,19		
Enthusiasm	Male	16,81	3,46	-,819	0,41
	Female	17,28	2,65		
Athlete Commitment Scale	Male	66,25	10,42	-,296	0,76
	Female	66,78	7,81		

*p<0,05

When Table 3 was evaluated, it was determined that there was no statistical difference between the gender variable of the research group and the cognitive behavioral physical activity and athlete commitment scale subscale score averages (p>0.05). It was observed that the cognitive behavioral physical activity scale mean scores of the male students in the

research group were higher than the female students, and the athlete engagement scale mean scores were higher for the female students than the male students.

Table 4. Variance Analysis According to Age Variable of the Research Group

		Age				
		$\overline{X}$	sd	F	Sig	Difference
Result Expectation	20-23 years old (a)	20,41	3,24	,798	0,45	-
	24-27 years old (b)	19,67	3,18			
	28 years old and over (c)	20,15	2,61			
Self Regulation	20-23 years old (a)	20,62	3,32	,305	0,73	-
	24-27 years old (b)	20,41	3,41			
	28 years old and over (c)	20,93	2,94			
Personal Disabilities	20-23 years old (a)	18,35	4,14	,317	0,72	-
	24-27 years old (b)	18,12	3,38			
	28 years old and over (c)	17,72	3,94			
Cognitive Behaviorist Physical Activity Scale	20-23 years old (a)	59,39	9,70	,231	0,79	-
	24-27 years old (b)	58,21	8,56			
	28 years old and over (c)	58,81	7,96			
Trust	20-23 years old (a)	16,97	2,33	2,433	0,09	-
	24-27 years old (b)	16,18	1,94			
	28 years old and over (c)	17,06	2,47			
Devotedness	20-23 years old (a)	15,02	3,56	4,329	0,01	a-b, b-c
	24-27 years old (b)	14,90	3,73			
	28 years old and over (c)	16,82	2,80			
Vigorousness	20-23 years old (a)	17,85	1,85	3,930	0,02	a-b
	24-27 years old (b)	16,29	3,89			
	28 years old and over (c)	17,29	2,20			
Enthusiasm	20-23 years old (a)	17,39	2,81	1,803	0,16	-
	24-27 years old (b)	16,30	4,05			
	28 years old and over (c)	17,29	2,31			
Athlete Commitment Scale	20-23 years old (a)	67,25	7,96	3,425	0,03	b-c
	24-27 years old (b)	63,74	12,02			
	28 years old and over (c)	68,75	7,45			

*p<0,05

When Table 4 was assessed, it was specified that there was no statistical difference between the age variable of the research group and the cognitive behavioral physical activity scale and scale sub-dimension score averages (p>0.05). While it was determined that there was a significant difference between the athlete commitment scale; dedication and vigor scale sub-dimensions average scores of the research group (p<0.05), it was determined that there was no significant difference between the confidence and enthusiasm scale sub-dimensions average scores (p>0.05). It was observed that there was a significant difference between the age variable of the athlete commitment scale and dedication sub-dimension of the students in the research group [t=4.329, p<0.05]. According to the results of the analysis conducted to determine which

groups these differences originate from, the average of students aged 28 and over ($\bar{X}$ =16.82), 20-23 years old ($\bar{X}$ =15.02), 24-27 years old ($\bar{X}$ =14.90), It was determined that there was a statistically significant difference between the averages of students between the 19 and 20 range in favor of students aged 28 and over. It was observed that there was a significant difference between the age variable of the athletes' commitment scale and vigor sub-dimension of the students in the research group [t=3.930, p<0.05]. According to the results of the analysis conducted to determine which groups these differences originate from, the averages of students aged 20-23 ($\bar{X}$ =17.85), those aged 28 and over ($\bar{X}$ =17.29), those aged 24-27 ($\bar{X}$ =16.29), It was determined that there was a statistically significant difference between the averages of students in the age range in favor of students in the 20-23 age range. It was observed that there was a significant difference between the age variable of the athlete commitment scale of the students in the research group [t=3.425, p<0.05]. According to the results of the analysis conducted to determine which groups these differences originate from, the average of students aged 28 and over ($\bar{X}$ =68.75), 20-23 years old ($\bar{X}$ =67.25), 24-27 years old ($\bar{X}$ =63.74), It was indicated that there was a statistically significant difference between the averages of the students between the ages of 10 and above in favor of students aged 28 and over.

Table 5. Variance Analysis According to the Height Variable of the Research Group

		Height				
		$\overline{X}$	ss	F	Sig	Difference
Result Expectation	150-160 cm (a)	20,48	3,20	1,369	0,24	-
	161-170 cm (b)	21,03	2,88			
	171-180 cm (c)	19,66	3,30			
	181-190 cm (d)	19,65	2,76			
	191 cm and over (e)	19,54	2,76			
Self Regulation	150-160 cm (a)	21,40	2,64	1,866	0,12	-
	161-170 cm (b)	21,60	3,15			
	171-180 cm (c)	20,33	3,69			
	181-190 cm (d)	20,28	3,06			
	191 cm and over (e)	19,58	3,14			
Personal Disabilities	150-160 cm (a)	18,64	3,90	,885	0,47	-
	161-170 cm (b)	18,90	3,52			
	171-180 cm (c)	17,86	3,92			
	181-190 cm (d)	17,28	3,99			
	191 cm and over (e)	17,87	3,55			
Cognitive Behaviorist Physical Activity Scale	150-160 cm (a)	60,52	9,03	1,623	0,17	-
	161-170 cm (b)	61,53	7,65			
	171-180 cm (c)	57,86	9,45			
	181-190 cm (d)	57,21	8,37			
	191 cm and over (e)	57,00	8,61			
Trust	150-160 cm (a)	16,96	2,15	3,931	0,00	b-d, c-d
	161-170 cm (b)	16,00	1,64			
	171-180 cm (c)	16,13	2,82			
	181-190 cm (d)	17,90	2,10			
	191 cm and over (e)	16,58	1,71			
Devotedness	150-160 cm (a)	15,16	3,88	3,815	0,00	b-d, d-e
	161-170 cm (b)	14,75	2,90			
	171-180 cm (c)	15,38	3,61			
	181-190 cm (d)	17,48	2,80			
	191 cm and over (e)	14,30	3,66			
Vigorousness	150-160 cm (a)	17,96	2,03	,839	0,50	-
	161-170 cm (b)	17,06	2,30			
	171-180 cm (c)	16,97	2,90			
	181-190 cm (d)	17,09	2,88			

	191 cm and over (e)	16,45	4,27			
Enthusiasm	150-160 cm (a)	17,32	3,40	1,106	0,35	-
	161-170 cm (b)	17,60	2,47			
	171-180 cm (c)	16,11	2,58			
	181-190 cm (d)	17,25	3,02			
	191 cm and over (e)	16,66	4,71			
Athlete Commitment Scale	150-160 cm (a)	67,58	9,15	1,765	0,14	-
	161-170 cm (b)	65,60	6,95			
	171-180 cm (c)	64,67	10,39			
	181-190 cm (d)	69,87	9,10			
	191 cm and over (e)	64,08	11,91			

*p<0,05

When Table 5 was scrutinized, it was determined that there was no statistical difference between the height variable of the research group and the cognitive behavioral physical activity scale and scale sub-dimension mean scores (p>0.05). While it was determined that there was a significant difference between the mean scores of the research group's confidence and dedication sub-dimensions (p<0.05), it was determined that there was no difference between the mean scores of the athlete commitment scale, vigor and enthusiasm sub-dimensions (p>0.05). It was monitored that there was a significant difference between the athlete commitment scale and the confidence sub-dimension height variable of the students in the research group [t=3.931, p<0.05]. According to the results of the analysis conducted to determine which groups these differences originate from, the average height of students with a height of 181-190 cm is ($\bar{X}$ =17.90), 150-160 cm ($\bar{X}$ =16.96), and 191 cm and above ($\bar{X}$ =16.58).), it was observed that there was a statistically significant difference between the average heights of students with heights of 171-180 cm ($\bar{X}$ =16.13), 161-170 cm ($\bar{X}$ =16.00), in favor of students with heights of 181-190 cm. It was observed that there was a significant difference between the height variable of the athlete commitment scale and dedication sub-dimension of the students in the research group [t=3.815, p<0.05]. According to the results of the analysis conducted to determine which groups these differences originate from, the average height of the students with a height of 181-190 cm ($\bar{X}$ =17.48), 171-180 cm ($\bar{X}$ =15.38), and 150-160 cm ($\bar{X}$ =15.16).), it was observed that there was a statistically significant difference between the average height of the students with a height of 161-170 cm ($\bar{X}$ =14.75), 191 cm and above ($\bar{X}$ =14.30), in favor of the students with a height of 181-190 cm.

Table 6. Variance Analysis According to Body Weight Variable of the Research Group

		Body Weight				
		$\overline{X}$	**Sd**	**F**	**Sig**	**Difference**
Result Expectation	60-70 kg (a)	19,87	3,02	,322	0,81	-
	71-80 kg (b)	19,77	2,54			
	81-90 kg (c)	20,36	3,32			
	91 kg and over (d)	20,04	3,16			
Self Regulation	60-70 kg (a)	20,65	3,34	,774	0,51	-
	71-80 kg (b)	20,11	2,62			
	81-90 kg (c)	21,10	3,41			
	91 kg and over (d)	20,33	3,53			
Personal Disabilities	60-70 kg (a)	17,37	4,05	1,129	0,33	-
	71-80 kg (b)	17,63	3,71			
	81-90 kg (c)	18,76	3,85			
	91 kg and over (d)	18,12	3,34			
Cognitive Behaviorist Physical Activity Scale	60-70 kg (a)	57,90	9,42	,868	0,45	-
	71-80 kg (b)	57,52	7,34			
	81-90 kg (c)	60,23	9,23			
	91 kg and over (d)	58,50	8,59			
Trust	60-70 kg (a)	16,40	2,22			
	71-80 kg (b)	17,22	2,11			

	81-90 kg (c)	16,21	2,54	2,630	0,05	-
	91 kg and over (d)	17,45	1,47			
Devotedness	60-70 kg (a)	15,79	3,36	,124	0,94	-
	71-80 kg (b)	15,36	3,25			
	81-90 kg (c)	15,37	3,67			
	91 kg and over (d)	15,66	3,80			
Vigorousness	60-70 kg (a)	16,96	2,37	,667	0,57	-
	71-80 kg (b)	16,58	3,64			
	81-90 kg (c)	17,34	3,11			
	91 kg and over (d)	17,50	1,79			
Enthusiasm	60-70 kg (a)	17,06	2,75	1,535	0,20	-
	71-80 kg (b)	16,33	3,57			
	81-90 kg (c)	17,60	3,26			
	91 kg and over (d)	16,29	3,09			
Athlete Commitment Scale	60-70 kg (a)	66,48	8,99	,087	0,96	-
	71-80 kg (b)	65,69	10,11			
	81-90 kg (c)	66,59	10,69			
	91 kg and over (d)	66,91	7,86			

*p<0,05

When Table 6 was reviewed, it was determined that there was no statistical difference between the research group's body weight variable, cognitive behavioral physical activity and athlete commitment scale subscale score averages (p>0.05). In the research group, it was observed that the cognitive behavioral physical activity scale mean scores of students with a body weight of 81-90 kg were higher than the students in other groups, and the athlete engagement scale mean scores of students with a body weight of 91 kg and above were higher than the students in other groups.

Table 7. Variance Analysis According to Research Group's Years of Doing Sports Variable

	Year of Sports					
		$\overline{X}$	**Sd**	**F**	**Sig**	**Difference**
Result Expectation	1-5 years (a)	20,90	3,20	,322	0,81	-
	6-11 years (b)	19,65	2,85			
	12 years and over (c)	20,13	3,14			
Self Regulation	1-5 years (a)	21,22	3,44	,774	0,51	-
	6-11 years (b)	20,33	3,22			
	12 years and over (c)	20,72	3,11			
Personal Disabilities	1-5 years (a)	19,35	3,79	1,129	0,33	-
	6-11 years (b)	17,58	3,52			
	12 years and over (c)	18,00	4,09			
Cognitive Behaviorist Physical Activity Scale	1-5 years (a)	61,48	9,35	,868	0,45	-
	6-11 years (b)	57,56	8,19			
	12 years and over (c)	58,86	8,93			
Trust	1-5 years (a)	15,90	2,52	2,630	0,05	-
	6-11 years (b)	16,91	2,06			
	12 years and over (c)	16,93	2,30			
Devotedness	1-5 years (a)	15,28	3,40	,124	0,94	-
	6-11 years (b)	15,66	3,68			
	12 years and over (c)	15,39	3,39			
Vigorousness	1-5 years (a)	16,48	2,61	,667	0,57	-
	6-11 years (b)	17,09	3,41			
	12 years and over (c)	17,54	2,16			
Enthusiasm	1-5 years (a)	17,16	2,88			

	6-11 years (b)	16,90	3,61			-
	12 years and over (c)	16,90	2,85	1,535	0,20	
Athlete	1-5 years (a)	65,00	1,05			
Commitment	6-11 years (b)	66,71	10,46			
Scale	12 years and over (c)	66,86	8,17	,087	0,96	-

*p<0,05

When Table 7 was evaluated, it was determined that there was no statistical difference between the research group's body weight variable, cognitive behavioral physical activity and athlete commitment scale subscale score averages (p>0.05). In the research group, it was observed that the cognitive behavioral physical activity scale mean scores of the students with 1-5 years of sports playing years were higher than the students in other groups, and the athlete engagement scale mean score averages of the students with 12 or more years of sports playing years were higher than the students in other groups.

DISCUSSION

Table 3 revealed no statistical difference between the research group's gender variable and the averages of the cognitive behavioral physical activity and athlete commitment scale subscales (p>0.05). Male students in the research group had higher mean scores on the cognitive behavioral physical activity scale than female students, but female students had higher mean scores on the athlete commitment scale (14).

When considering sports participation rates around the world, it is clear that, while the number of female athletes has lately increased, the number of male athletes still outnumbers female athletes. It is believed that as women participate in sports, their cognitive behavior and dedication to sports improve at the same rate as males.

The sports industry can serve as a venue for health promotion by encouraging people to invest in their health and providing them with the necessary tools and skills. Individuals must regard the sports sector as a place where they belong, which requires inclusive role modeling that shows people that sports is a place for them, their preferences, and qualities. Portraying athletes differently based on their gender strengthens masculine hegemony, which requires women to be subordinate to males, while segregating male and female athletes promotes old gender preconceptions about what behavior is appropriate for men and women (15).

When **Table 4** was scrutinized, it was specified that there was no statistical difference between the age variable of the research group and the cognitive behavioral physical activity scale and scale sub-dimension score averages (p>0.05).

This found that college students' exercise intentions are mostly influenced by their attitudes toward exercise, subjective norms, and perceived behavioral control, with attitude and perceived behavioral control accounting for the majority of the variance. As a result, it is critical to boost university students' positive cognitive levels and self-control when it comes to physical activity, as well as encourage their participation and execute interventions. When college students have good attitudes toward exercise and perceive more positive aspects and fewer inhibitory variables in the process of integrating exercise practices, they are more likely to engage in exercise (16).

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When **Table 7** was evaluated, it was determined that there was no statistical difference between the research group's body weight variable, cognitive behavioral physical activity and athlete commitment scale subscale score averages (p>0.05). In the research group; it was discovered that the cognitive behavioral physical activity scale mean scores of students with 1-5 years of sports playing experience were higher than the students in other groups, as were the athlete engagement scale mean score averages of students with 12 or more years of sports playing experience.

Previous research has shown an inverse relationship between relative weight gain and weight class. This relationship was evident in this study. There is a roughly linear, negative relationship between weight class and relative weight gain. Athletes who lose the most weight have the potential to regain the weight they lost through rehydration. If this situation and the time required to return to original body weight after weight loss provide a competitive advantage, athlete rule makers face an ethical dilemma (17).

According to several studies conducted on athletes, they are meant to match persons similarly in terms of height and weight. If some people gain an advantage as a result of weight loss and subsequent gain, we can draw inspiration from our research on whether athletes should be weighed closer to the start, which states that during tournaments, "competitors should be weighed no more than 2 hours and at least half an hour before the first session every day." However, rule makers enable weigh-ins to take place early if league coaches agree. A common practice among athletes is to hold tournament weigh-ins for the following day's events at the end of each day's workout. If a team applies the weight gain effect, it is analogous to a team's shot putters throwing a lighter shot than their opponents. Weigh-in rules are intended to safeguard athletes from the harmful health impacts of excessive weight loss while also ensuring that competitors are evenly matched. But, if it is true that weight loss applications provide a competitive edge, can weight loss habits be altered? Perhaps

rulemakers could follow the American College of Sports Medicine's proposal and have weigh-ins during competition time (18).

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