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The Needs For Cognition and Cognitive Avoidance: The Example of the Faculty of Sports Science*

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Abstract

The aim of this study is to examine the levels of cognitive avoidance and needs for cognition of students in higher education institutions providing sports education, according to some variables and to determine the relationship between them. The sample of study consists of 209 female and 117 male students studying at different departments and grades at Gazi University, Faculty of Sport Sciences. Quantitative research method was used in the research and it was designed in relational survey model. The "Cognitive Avoidance Scale" developed by Akyay (2016) and the "Needs for Cognition Scale" developed by Uçar (2017) were used as data collection tools. Data were analyzed by using descriptive statistical methods, t-test, single-factor variance analysis and Pearson Correlation test. In accordance with the findings of the study, it was seen that the cognitive avoidance and needs for cognition of the participants in the study group were at the average level ($\overline{X}$=3.23, $\overline{X}$=3.02). It can be stated that the participants have an average level of tendency to engage in cognitive activities such as learning a new concept, researching the causes of events. In addition, it can be stated that participants mostly prefer thought suppression and distraction strategies from cognitive avoidance strategies ($\overline{X}$=3.51, $\overline{X}$=3.36). It can be said that the participants made a cognitive effort to avoid a disturbing thought and that they prefer to avoid stimuli that trigger irritating thoughts. As a result of the study, it was determined that the levels of needs for cognition of the participants did not show a significant difference according to gender, class, age and their cognitive avoidance level did not show a significant difference according to gender, department, and class variables (p> .05). However, it was found that the level of needs for cognition of the participants showed a significant difference according to the department variable and their cognitive avoidance level showed a significant difference according to the age variable (p <.05). In addition, the results of the research show that there is a positive correlation between the levels of cognitive avoidance and needs for cognition of the participants (r=.45, p<.05).

Keywords: Need for cognition, Cognitive avoidance, Sport, Student

Biliş İhtiyacı ve Bilişsel Kaçınma: Spor Bilimleri Fakültesi Örneği

Öz

Bu çalışmanın amacı, spor eğitimi veren yükseköğretim kurumlarındaki öğrencilerin bilişsel kaçınma ve biliş ihtiyacı düzeylerini bazı değişkenlere göre incelemek ve aralarındaki ilişkiyi belirlemektir. Araştırmanın çalışma grubunu, Gazi Üniversitesi Spor Bilimleri Fakültesi'nde farklı bölüm ve sınıf düzeyinde öğrenim gören 92'si kadın ve 117'si erkek 209 öğrenci oluşturmaktadır. Araştırmada nicel araştırma yöntemi kullanılmış olup ilişkisel tarama modelinde tasarlanmıştır. Veri toplama aracı olarak, Akyay (2016) tarafından geliştirilen "Bilişsel Kaçınma Ölçeği" ve Uçar (2017) tarafından geliştirilen "Biliş İhtiyacı Ölçeği" kullanılmıştır. Veriler; betimsel istatistik yöntemleri, t-testi, tek faktörlü varyans analizi ve Pearson Korelasyon testi kullanılarak analiz edilmiştir. Araştırmada elde edilen bulgular doğrultusunda, çalışma grubunda yer alan katılımcıların bilişsel kaçınma ve biliş ihtiyacı düzeylerinin ortalama seviyede olduğu görülmüştür ($\overline{X}$=3.23, $\overline{X}$=3.02). Katılımcıların yeni bir kavramı öğrenme, olayların nedenlerini araştırma gibi bilişsel etkinliklerle ilgilenme eğilimlerinin ortalama düzeyde olduğu ifade edilebilir. Buna ek olarak katılımcıların, bilişsel kaçınma stratejilerinden düşünce baskılama ve oyalanma stratejilerini çoğunlukla tercih ettikleri belirtilebilir ($\overline{X}$=3.51, $\overline{X}$=3.36). Katılımcıların rahatsız edici bir düşünceden kaçınmak için bilişsel bir çaba sarf ettikleri ve rahatsız edici düşünceleri tetikleyen uyaranlardan kaçınma yolunu tercih ettikleri ifade edilebilir. Araştırma sonucunda katılımcıların biliş ihtiyacı düzeyinin cinsiyet, sınıf, yaş; bilişsel kaçınma düzeyinin cinsiyet, öğrenim görülen bölüm, sınıf değişkenlerine göre anlamlı bir farklılık göstermediği belirlenmiştir (p>.05). Bununla beraber katılımcıların biliş ihtiyacı düzeyinin öğrenim görülen bölüm değişkenine göre, bilişsel kaçınma düzeyinin yaş değişkenine göre anlamlı bir farklılık gösterdiği tespit edilmiştir (p<.05). Ayrıca araştırma sonuçları, katılımcıların bilişsel kaçınma ile biliş ihtiyacı düzeyleri arasında pozitif yönlü orta düzeyde bir korelasyon olduğunu göstermektedir (r=.45, p<.05).

Anahtar Kelimeler: Biliş ihtiyacı, Bilişsel kaçınma, Spor, Öğrenci

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INTRODUCTION

Today, thinking is considered as a learnable skill and many approaches to improving thinking are put forward in education. In order to make the thinking in an effective form, it is important for individuals to act in a systematic, planned, and detailed way in respect of thinking and to have a high awareness (Tok, 2010). The fact that individuals wanted to understand the environment and explain them rationally led to the emergence of the concept of cognition (Betrams & Dichäuser, 2009). The need for cognition is defined as an individual's interest in dealing with cognitive activities such as problem solving, learning a new phenomenon or concept, researching the cause of events, and rejoicing in making intense effort while performing these activities (Cacioppo & Pety, 1982).

The need for cognition is not a concept that concerns individuals' private lives. An individual's approach to the problems encountered in business life, problem-solving skills, and the tendency to enjoy dealing with problems are also directly related to the level of needs for cognition of the individual (Sodka & Deeter-Schmelz, 2008). Individuals with high needs for cognition tend to think more (Petty et al., 2009: 326). When these individuals are compared to individuals with low needs for cognition, they are more successful in solving complex problems and are applying more cognitive resources for academic success, by doing more work based on cognitive responses (Curşeu, 2011: 415). It is a concept that can explain the differences in the learning and problem solving stages of individuals with the same mental ability, mental resource and cognitive strategies on the basis of the need for cognition (Gülgöz & Sadowski, 1995).

Another concept that tries to understand and interpret individual differences is cognitive avoidance. Cognitive avoidance is cognitive strategies used voluntarily or involuntarily to avoid threatening emotional and cognitive content (Dugas & Robichaud, 2007). Some of these strategies can be used to change thoughts, suppress thoughts and remove threatening images from the mind (Akyay, 2016). The structuring of the places where the education is carried out according to individual characteristics is important for the quality of education. Knowledge of need for cognition and cognitive avoidance strategies is a factor that contributes to the development of the level of education. In addition, it is considered important to have a new perspective within the educational activities to be carried out. When reviewing the related literature, there was no study investigating the relationship between cognitive avoidance and need for cognition. It is thought that this relationship will contribute to the literature. In this context, the aim of the study is to determine the relationship between the levels of cognitive avoidance and needs for cognition of students in higher education institutions. In the context of this general purpose, determining the needs for cognition and cognitive avoidance levels of the participants and examining them according to some variables constitute the focus of the study.

METHOD

Participants

The sample of study consists of 209 female and 117 male students studying at different departments and grades at Gazi University, Faculty of Sport Sciences in 2017-2018 academic year and participating in the study by taking into account the principle of voluntary participation. Demographic information on the participants is given below.

Data Collection Tools

Two different scales were used as data collection tools. “Cognitive Avoidance Scale” developed by Akyay (2016) is a 5-point Likert-type, 25-item and 5-factor structure. The total score that can be obtained the scale is between 12 and 125. The Cronbach Alpha internal consistency coefficient is .95, and it is between α=.71 and .90 for the sub-scales and test retest reliability is r=.81 (Akyay, 2016). The "Needs for Cognition Scale" developed by Uçar (2017) is a 5-point Likert-type, 18-item and single-factor structure. The single factor has an eigenvalue of 5.90 and the variance explained is 39.338%. The Cronbach Alpha internal consistency coefficient of the scale is .89 (Uçar, 2017).

Analysis of Data

Demographic characteristics of the participants were shown as percentage and frequency. Descriptive statistics (mean and standard deviation) were used to determine the participants' sub-dimension mean scores for the Cognitive Avoidance and Needs for Cognition Scale. Shapiro-Wilk test was used to test whether the distribution was normal after exclusion of the extreme values in the data set. Shapiro-Wilk test was found to be .001 for both scales. Skewness and Kurtosis values were examined. In both scales, these values are between -1.5 and +1.5. This shows that the data is normally distributed (Tabachnick & Fidell, 2013). For this reason, while the statistics of the study were performed, parametric tests were used. T-test was applied to determine whether there was a significant difference between the mean scores obtained from the scales according to gender variable. One-way ANOVA was applied to determine whether there was a significant difference according to age, class level and department variables. The Pearson Correlation Coefficient was used to determine whether there was any relationship between the mean scores obtained from the Cognitive Avoidance Scale and the mean scores obtained from the Need for Cognition Scale. The analyses in this study were done by using SPSS 22.0 package program and Excel database program.

FINDINGS

Table 1. Distribution of the personel information of the participants

Participant		N	%
Gender	Male	117	56.0
	Female	92	44.0
Age	18-19	47	22.5
	20-21	66	31.6
	22-23	57	27.3
	24 and above	39	18.7
Class Level	1st Grade	49	23.4
	2nd Grade	55	26.3
	3rd Grade	60	28.7
	4th Grade	45	21.5
Department	Physical Education and Sports Teaching	48	23.0
	Sports Management	55	26.3
	Coaching Training	54	25.8
	Recreation	52	24.9
Total		209	100

Table 1 shows that 56% of the participants were male, 22.56% were in the age group of 18-19, 31.6% were in the age group 20-21, 28.7% were 3rd Grade and 25.8% is coaching training department.

Table 2. Distribution of Participants' Mean Scores from Cognitive Avoidance Scale according to Sub-dimensions

Sub-Dimensions Cognitive Avoidance Scale	N	$\overline{X}$	S
Changing Thoughts	209	2.83	.73
Transforming Images into Thought	209	3.21	.86
Distraction	209	3.36	.83
Avoiding Threatening Stimuli	209	3.22	.93
Thought Suppression	209	3.51	.84
Total	209	3.23	.52

When the scores obtained from the Cognitive Avoidance Scale sub-dimensions are examined, the mean score of the participants obtained from sub-dimension of the suppression ($\overline{X}$=3.51) is the highest sub-dimension mean score and the mean score obtained from the sub-dimension of changing the thoughts ($\overline{X}$= 2.83) is the lowest sub-dimension mean score. On the other hand, the mean score of sub-dimension of transforming images into thought was determined as ($\overline{X}$= 3.21), the distraction sub-dimension mean score as ($\overline{X}$= 3.36), and the avoiding threatening stimuli sub-dimension mean score as ($\overline{X}$= 3.22). The total mean score obtained from the scale is ($\overline{X}$= 3.23).

Table 3: The Mean Score of Participants from the Need for Cognition Scale

	N	$\overline{X}$	S
The Need for Cognition Scale	209	3.03	.52

The mean score of the participants from the Needs for Cognition Scale with a single factor structure was determined as ($\overline{X}$=3.03).

Table 4: T-Test Results of the Mean Scores of Participants from Cognitive Avoidance Scale and Needs for Cognition Scale according to Gender

Gender		N	$\overline{X}$	S	sd	t	p
C.A.S.	Female	92	3.25	.72	207	.43	.39
	Male	117	3.20	.74			
N.C.S	Female	92	3.01	.56	207	-.3	.40
	Male	117	3.04	.48			

The mean score obtained from the Cognitive Avoidance Scale of the female students of the Faculty of Sport Sciences is ($\overline{X}$=3.25) and the mean score of male students is ($\overline{X}$=3.20). The results of the analysis show that the levels of cognitive avoidance of participants did not differ significantly according to gender, t(207)=.43 p>.05. When the mean scores of the participants from the Needs for Cognition Scale were examined, it was determined that the mean score of the female participants is ($\overline{X}$=3.01) and the male participants is ($\overline{X}$=3.04). The results of the analysis show that the total score of the participants from the Needs for Cognition Scale did not differ significantly according to gender, t(207)=-.33,p>.05.

Table 5: Comparison of Scores of Participants from the Cognitive Avoidance Scale and Needs for Cognition Scale according to Department Variable

Department		N	$\overline{X}$	sd	F	P
C.A.S	Physical Education and Sports Teaching	48	3.12	.60	.96	.41
	Sports Management	55	3.26	.81		
	Coaching Training	54	3.17	.87		
	Recreation	52	3.34	.57		
	Total	209	3.23	.73		
N.C.S	Physical Education and Sports Teaching	48	3.20	.49	4.3	.006
	Sports Management	55	2.94	.48		
	Coaching Training	54	2.89	.56		
	Recreation	52	3.11	.47		
	Total	209	3.03	.51		

When the mean scores obtained from the Cognitive Avoidance Scale were examined according to the departments of the participants, it was seen that the 52 participants studying in the recreation department have the highest mean score ($\overline{X}$= 3.34). 48 participants studying in the physical education and sports teaching department have the lowest mean score ($\overline{X}$=3.12). The mean score of 55 participants in sports management department is ($\overline{X}$=3.26) and the mean score of 54 participants in the coaching training department is ($\overline{X}$=3.17). The results of the analysis indicated that the mean scores of the participants from the Cognitive Avoidance Scale did not show a significant difference according to the department variable, F(3,205)=.96, p>.05.

When the mean scores obtained from the Need for Cognition Scale were examined according to the departments of the participants, it was seen that the 48 participants studying in the physical education and sports teaching have the highest mean score ($\overline{X}$= 3.20). 54 participants studying in the coaching training department have the lowest mean score ($\overline{X}$=2.89). The mean score of 55 participants in sports management department is ($\overline{X}$=2.94) and the mean score of 52 participants in the recreation department is ($\overline{X}$=3.11).

The results of the analysis indicated that the mean scores of the participants from the Need for Cognition Scale showed a significant difference according to the department variable, F(3,205)=4.3, p<.05.

The results of the Tukey multiple comparison test conducted to determine the meaningful difference among the groups show that the level of needs for cognition of the participants studying in the physical education and sports teaching department is significantly higher than that of the participants studying in the sports management and coaching education departments.

Table 6: Comparison of Scores of Participants from the Cognitive Avoidance Scale and Needs for Cognition Scale according to Class Level Variable

Class Level		N	$\overline{X}$	sd	F	P
C.A.S	1st Grade	49	3.42	.82	2.35	.07
	2nd Grade	55	3.28	.58		
	3rd Grade	60	3.16	.82		
	4th Grade	45	3.04	.63		
	Total	209	3.23	.58		
N.C.S	1st Grade	49	3.03	.57	1.71	.16
	2nd Grade	55	3.10	.42		
	3rd Grade	60	2.91	.55		
	4th Grade	45	3.10	.50		
	Total	209	3.03	.52		

When the mean scores of the participants from the Cognitive Avoidance Scale was compared according to the class level, it was seen that 49 participants in the 1st grade have the highest mean score ($\overline{X}$=3.42). This is followed by 55 participants in the 2nd grade with the mean score ($\overline{X}$=3.28). 45 participants in 4th grade have lowest mean score ($\overline{X}$=3.04). The results of the analysis revealed that the mean score obtained from the Cognitive Avoidance Scale did not differ significantly according to the class level, F(3,205)=2.35, p>.05.

When the mean scores of the participants from the Need for Cognition Scale was compared according to the class level, it was seen that the highest mean score ($\overline{X}$=3.10) was obtained by 55 participants in the 2nd grade and 45 participants in 4th grade. This is followed by 49 participants in the 1st grade with the mean score ($\overline{X}$=3.03). 60 participants in 3rd grade have lowest mean score ($\overline{X}$=2.91). The results of the analysis revealed that the mean score obtained from the Need for Cognition Scale did not differ significantly according to the class level, F(3,205)=1.71, p>.05.

Table 7: Comparison of Scores of Participants from the Cognitive Avoidance Scale and Needs for Cognition Scale according to Age Variable

Age		N	$\overline{X}$	sd	F	P
C.A.S	18-19	47	3.40	.69	5.52	.002
	20-21	66	3.37	.76		
	22-23	57	2.92	.60		
	24 and above	39	3.21	.81		
	Total	209	3.23	.73		
N.C.S	18-19	47	3.08	.53	.22	.88
	20-21	66	3.01	.47		
	22-23	57	3.03	.49		
	24 and above	39	2.99	.61		
	Total	209	3.03	.52		

When looking at Table 5, it is seen that the mean score of 47 participants in the 18-19 age range from the Cognitive Avoidance Scale is ($\overline{X}$=3.40), mean score of 66 participants in the 20-21 age range is ($\overline{X}$=3.37), and the mean score of 39 participants aged 24 and above is ($\overline{X}$=3.21).

When examined the analysis results, it was found that mean score of the participants from the Cognitive Avoidance Scale showed a significant difference according to the age variable, F(3,205)=5.24, p<.05.

The results of the Tukey multiple comparison test, which was used to determine the difference between the groups, revealed that the cognitive avoidance levels of the participants aged 18-19 were significantly higher than that of participants aged 20-21 and 22-23.

The highest mean score of the participants aged 18-19 from Needs for Cognition Scale was found to be 47 and the mean score was found to be ($\overline{X}$=3.08).

The lowest mean score was obtained by 39 participants aged 24 and above with ($\overline{X}$=2.99). The mean score of 57 participants in the 22-23 age range is ($\overline{X}$=3.03).

The results of the analysis revealed that the mean score of the participants from the Needs for Cognitions Scale did not show a statistically significant difference according to the age variable, F(3,205)=.22, p>.05.

Table 8: Correlation Coefficient of Scores from Cognitive Avoidance Scale and Needs for Cognition Scale

	Needs for Cognition
Cognitive Avoidance	.45

The correlation coefficient between the mean score obtained from the Cognitive Avoidance Scale and the mean score obtained from the Needs for Cognition Scale were found to be .45.

This value shows that there is a positively moderate relationship between cognitive avoidance and need for cognition.

It is defined as a high level of relationship when the correlation coefficient is between .70-1.00 as absolute value; as a moderate level of relationship when it is between .70-.30; as a low level of relationship when it is between .30-0.00 (Büyüköztürk, 2014).

DISCUSSION AND RESULT

When the results of the research are examined, the level of the needs for cognition of participants does not indicate a significant difference according to gender, class level and age variables. However, according to the department variable, it is seen that the levels of the needs for cognition of the participants in the department of physical education and sports teaching are significantly higher than that of the participants in the sports management and coaching education departments.

In addition, the levels of cognitive avoidance of participants did not differ significantly according to gender, department and class level variables, but considering the age variable, it was determined that the cognitive avoidance levels of the participants aged 18-19 were significantly higher than that of the participants aged 20-21 and 22-23.

The findings related to the gender variable discussed in the study do not show any significance when considering the levels of needs for cognition of the participants. There are studies supporting the research results when the related literature is examined (Osberg, 1987, Tanaka, Panther and Winborne, 1988, Waters and Zakrajek, 1990, Sadowski, 1993, Gülgöz, 2001, Polat, 2008, Saraloğlu & Çengel, 2013, Değerli, 2013). In these studies, no significant relationship was found between need for cognition and gender variable. However, Gençdoğan (2001) found that the level of needs for cognition of the female participants was higher than the male participants in a study conducted on the teacher candidates in different departments at the university. Demirtaş-Madran (2012) found that females' needs for cognition were significantly higher than male participants in a study conducted on university students. Considering the studies on gender variable, it is seen that there is no consensus in the literature. The reason for this is thought to be the effect of sociological and cultural differences in the geographical regions where individuals grow.

The needs for cognition of the participants differ significantly in favor of the students in the department of physical education and sports teaching according to the department variable. The score obtained from the university exam is important in terms of entrance to the Faculty of Sport Sciences. Considering the entrance mean scores for the departments within the faculty, it is seen that the mean score of the physical education and sports teaching department is high. Therefore, it is thought that the students' levels of need for cognition are higher as the academic successes of the students studying in this department are higher. Gençdoğan (2001) also found in his study that the level of need for cognition differed significantly according to the department variable. According to the study, it was determined that the level of needs for cognition of the students in the department of psychological counseling and guidance is higher than that of students in the history department. When examined the age variable, it was determined that there was no significant difference between the participants' needs for cognition. Saracaloğlu & Çengel (2013) also stated that there is no significant relationship between age and needs for cognition in the studies performed on the students of the faculty of education. Tümkaya (2008) determined that there was no significant difference between the level of needs for cognition and class level in the study. This result supports the findings of our study.

When examined the mean scores of the participants from the sub-dimensions of Cognitive Avoidance Scale, it is seen that they are more oriented towards the strategies of "thought suppression" and "distraction" among the cognitive avoidance strategies. From this point of view, it can be stated that participants prefer a way of avoiding stimuli that trigger the disturbing thoughts and that they make a cognitive effort to avoid a disturbing thought. When the total score obtained from the scale is examined, it can be said that the participants' tendency to use cognitive avoidance strategies is above average. Considering the mean scores of participants from the Needs for Cognition Scale, it can be stated that the participants have an average level of tendency to engage in

cognitive activities such as learning a new concept, researching the causes of events. However, it may be stated that they are not willing to face complex and difficult problems. The correlation coefficient between the mean score from the Cognitive Avoidance Scale and the mean score from the Needs for Cognition Scale was found to be .45. This value shows that there is a positively moderate correlation between cognitive avoidance and need for cognition. It can be stated that participants can use cognitive avoidance strategies effectively as their levels of needs for cognition increase.

When the related literature is examined, there is no study that examined the relationship between level of need for cognition and cognitive avoidance level. However, the need for cognition was discussed together with problem solving skills (Coutinho, Wiemer-Hasting, Skowronski & Britt, 2005, Polat, 2008, Cenkseven & Akar-Vural, 2006), metacognitive awareness (Saracaloğlu and Çengel, 2013, Karakelle, 2012), sales performance (Türker, İşçi & Özaltın-Türker, 2015), information literacy (Değerli, 2013), self-confidence for body perception (Örsel Kadıoğlu, 2001) and pre-professional teacher identity (Arpacı, 2015). In this study, the relationship between levels of needs for cognition and cognitive avoidance levels of students studying at a higher education institution providing sports education was examined together with various demographic features. The realization of similar studies including the students studying in different departments will contribute to the field in terms of determining individual differences. However, it is thought that different variables can be discussed in related studies and may help to explain the current situation in depth.

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