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ORIGINAL ARTICLE

Investigation of The Correlation between Metacognition Levels and Ruminative Thought Forms of Sports Sciences Faculty Students

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ABSTRACT

Aim: The aim of this research is to investigate the correlation between the metacognition levels of the students of the faculty of sports sciences and their ruminative thought styles.

Method: The research is carried out using the correlational survey model. The universe of the research consists of sports science students studying at Hatay Mustafa Kemal University, Faculty of Sports Sciences, Department of Coaching, Physical Education and Sports Teaching, Recreation and Sports Management. The sample of the study, on the other hand, is a total of 287 sports science students, 131 female and 156 male, selected by convenience sampling. Pearson correlation and regression techniques are used in the analysis of the data.

Results: As a result of the research, it is determined that there is a moderately significant positive correlation between metacognitive awareness scores and ruminative thought style scores. In addition, it is determined that metacognitive awareness is a significant predictor of ruminative thought.

Conclusion: Based on the results of the research, excessive control of cognitions may cause repetitive thoughts.

Keywords: Sports sciences faculty, student, metacognition, ruminative thought

INTRODUCTION

It is critical that exercise participants increase their performance parameters in accordance with their warm-up activities, their ability to improve their cognitive performance, and their ability to contribute to their performance by boosting their neurological inputs.[1,2] Simultaneously, when health is considered, cognitive processes have a significant role in psychological, sociological, emotional, and spiritual domains. Cognitive processes have an important place in terms of being healthy in psychological, sociological, emotional and spiritual areas. Because the healthy execution of our cognitive processes helps both the society and the individual to protect their own health. As a matter of fact, maintaining our place in society is through healthy relationships. In this respect, controlling cognitive functions is essential for exhibiting behaviors in accordance with social norms. At this point, the concept of metacognition, which has an important role in controlling cognitive functions, can be mentioned. Flavel[3] explained metacognition as the individual's having knowledge about his own cognitive structure and being able to regulate this structure. Garner[4], on the other hand, mentioned the difference between cognition and metacognition. According to him, cognitive skills are the skills required to perform the task, while metacognitive skills are the skills required for the question of how the task is performed. Therefore, it is possible to express metacognition as the awareness of the individual's strong and weak cognitive processes and the cognitive resources that he can use to meet the expectations of the task.[5] In short, metacognition is the dimension of the information processing system that observes, organizes, evaluates and interprets its processes.[6]

Metacognitive beliefs are responsible for functional and dysfunctional control of the mind.[6] These beliefs determine what we pay attention to and what is included in consciousness. In this context, according to the metacognitive model, psychological disorders are related to dysfunctional categories of positive and negative metacognitive beliefs about cognitions.[7] Negative metacognitive beliefs can lead to various mental and functional problems. One of these problems is the disruptions that occur in ruminative thought styles. Wells and Matthews[8] stated that in the theory of self-regulatory and executive functions, metacognitive beliefs are the basis of ruminative thought styles. According to this theory, negative metacognitive beliefs determine ruminative thought styles. Ruminative thought style is a mental strategy that causes deterioration in the emotional state of the person.[9] In other words, ruminative thought is related to self-perception triggered by a sense of inadequacy. Individuals who show ruminative reactions as a result of these negative emotions may not be solution-oriented in the face of problems.[10] Because these individuals may have weak interpersonal relationships, they can only look at problems from a single perspective, not from a solution-oriented and different perspective.[11] When this situation is evaluated in terms of sports, sports is a phenomenon that allows people to discharge their negative emotions and can be effective in controlling these emotions. Such that, an increase is observed in neurotransmitters such as serotonin and dopamine, which are effective in making decisions and providing cognitive control of the brain.[12-13-14] As a result, these changes in our brain chemistry can also affect metacognition and ruminative thought styles. Ultimately, these concepts are related to the release of neurotransmitters, and doing sports and providing this release can positively affect our cognitive processes. Based on this information in the light of the literature, the aim of this study is to examine the correlation between the metacognition levels of the students of the faculty of sports sciences and their ruminative thought styles.

MATERIAL AND METHOD

Research Model: This research, in which the correlation between the metacognition levels of the students of the faculty of sports sciences and their ruminative thought styles is examined, is carried out using the "correlational

survey model". This model, on the other hand, is expressed as "research models aiming to determine the existence and/or degree of co-variance between two or more variables".[15]

Universe and Sample of the Research: The universe of the research consists of sports science students studying at Hatay Mustafa Kemal University, Faculty of Sports Sciences, Department of Coaching, Physical Education and Sports Teaching, Recreation and Sports Management. The sample in the research consists of 287 sports science students, 131 female and 156 male, selected by convenience sampling within the mentioned in the universe. Descriptive statistics results of the research sample are given in Table 1.

Table 1: Descriptive statistics of students

Gender	n	%	$\overline{X}_{age}$
Female	131	45,6	
Male	156	54,4	
Department of Education	n	%	
Coaching Training	55	19,2	20.60±1.72
Physical Education and Sports Teaching	126	43,9	
Recreation	53	18,5	
Sports Management	53	18,5	

According to Table 1, 45.6% (n=131) of the students are female; 54.4% (n=156) are male; 19.2% (n=55) are from coaching training, 43.9% (n=126) are from physical education and sports teaching, 18.5% (n=53) are from recreation and 18.5% (n=53) are from sports management. In addition, the average age of the students is determined as 20.60±1.72.

Data Collection Tools: In the study, data are collected using the "Personal Information Form", "Meta-cognitions Questionnaire-30" and "Ruminative Thought Style Questionnaire". The detailed information about the measurement tools is given below.

Personal Information Form: Within the scope of the research, the "Personal Information Form" created by the researcher is used to determine the information such as gender, age and education department of the students.

Meta-cognitions Questionnaire-30 (MCQ-30): "Meta-cognitions Questionnaire-30", which is developed by Cartwright-Hatton and Wells[16] in order to determine the metacognitive awareness levels of sports science students, the current original form is created by Wells and Cartwright-Hatton,[17] and its Turkish adaptation is made by Tosun and Irak[18] is used. The measurement tool has 30 items and a 4-point Likert type. While the lowest score that can be obtained from the measurement tool is 30, the highest score is 120. An increase in the score obtained from the measurement tool indicates an increase in pathological metacognitive activity. The Cronbach Alpha reliability coefficient of the measurement tool is found to be .86.[18] In this study, the Cronbach Alpha reliability coefficient of the measurement tool is determined as .76.

Ruminative Thought Style Questionnaire (RTSQ): The "Ruminative Thought Style Questionnaire" developed by Brinker and Dozois[19] and adapted into Turkish by Karatepe[20] is used to evaluate the ruminative thought styles of sports science students. The measurement tool is 200 items and 7-point Likert type. An increase in the scores obtained from the scale means that ruminative thought increases. Since it is not specific to a psychopathological condition, the sum of the scores in the scale does not indicate a psychiatric disorder. The Cronbach Alpha reliability coefficient of the measurement tool is found to be .91.[20] In this study, the Cronbach Alpha reliability coefficient of the measurement tool is determined as .91.

Data Collection: Before the data are collected in the research, the necessary information about the research is conveyed to the students in writing and orally by the researcher. The data from the students who listened and read the explanations are collected face to face by the researcher in the classroom environment.

Data Analysis: The data collected from the students are checked and transferred to the SPSS program. In addition to descriptive statistics, normality analysis is performed on the data. In the analysis of normality, the values of skewness and kurtosis of the data are checked. Since the values obtained are in the range of -2….+2, it is accepted that the data are suitable for normal distribution.[21] Pearson correlation and regression analyzes are used to analyze the data.

RESULTS

Table 1: The correlation results between metacognitive scores and ruminative scores

		Ruminative Thought
Metacognition	r	,445**
	p	,000

According to the results of Pearson correlation analysis in Table 1, it is determined that there is a moderately significant positive correlation between metacognitive awareness scores and ruminative thought style scores (r=.445; p=000).

Table 3: The effect of metacognitive awareness scores on ruminative thought scores

Model	B	Std. Error	β	t	p
Stable	23,353	8,274	---	2,832	,005
Metacognitive Awareness	,913	,109	,445	8,385	,000
$R= ,445$ $R^2_{adj}= ,195$ $F_{(1,285)} = 70,312$ p= ,00					

Dependent Variable=Ruminative Thought Method: Enter

Table 3 shows the results of the simple linear regression analysis performed to determine the effect of students' metacognitive awareness scores on ruminative thought. As a result of the analysis, it is seen that the regression model is statistically significant. When the t-test results regarding the significance of the regression coefficients are analyzed, it is found that metacognitive awareness (β= ,445; t= 8,385; p=.000) is a significant predictor of ruminative thought. It can be stated that 19% of the total variance of ruminative thought is explained by metacognitive awareness.

DISCUSSION AND CONCLUSION

This research is carried out to determine the correlation between the metacognition levels of the students in the

faculty of sports sciences and their ruminative thought styles. In this part of the research, it is aimed to discuss the correlation between students' metacognition levels and ruminative thought styles and the results of how metacognition level has an effect on ruminative thought.

As a result of the analysis carried out to determine the correlation between metacognition and ruminative thought style, it is determined that there is a positive and significant correlation between metacognition and ruminative thought style. According to this finding, it can be said that ruminative thought increases as metacognitive awareness increases. Metacognitive beliefs about the result achieved determine what we pay attention to and what we are aware of. Therefore, attention directed towards negativities can cause various mental problems. Due to this situation, it can be said that there is a positive correlation between metacognitive awareness and ruminative thought. No research has been found in the literature examining the correlation between metacognitive awareness and ruminative thought in the field of sports sciences. Kapu[22] concluded that there is a positive and significant correlation between ruminative thought style and metacognition, similar to the results obtained in studies conducted in different fields. In another similar study, Yiğit[23] found that there is a positive and significant correlation between depressive mood and the ruminative thought subscale.

As a result of the analysis performed to determine the effect of metacognitive awareness on ruminative thought scores, it is concluded that metacognitive awareness is a significant predictor of ruminative thought style. According to this finding, it can be said that metacognitive awareness affects ruminative thought. As metacognitive awareness of the result is related to cognitive processes and cognitive control, negative or negative metacognitive awareness may develop. This situation can reduce or, on the contrary, increase ruminative thought, that is, repetitive thoughts. No study has been found in the literature examining the effect of metacognitive awareness on ruminative thought in the field of sports sciences. When studies conducted in different fields are examined, Oyman[24] concluded that metacognitive beliefs among positive beliefs about anxiety, the uncontrollability of danger and thoughts, and the need to control thoughts are positively and significantly related to the severity of obsessive-compulsive symptoms. In another finding, Wilson and Hall[25,26,27,28,29] examined the mediating role of metacognitive beliefs in the correlation between obsessive-compulsive symptoms and thought control strategies. They concluded that worrying as a thought control strategy mediated the correlation between positive beliefs about worrying and negative beliefs about the uncontrollability of thought and danger between obsessive-compulsive symptoms and worrying about thought control strategies.

As a result, it is concluded that there is a positive and significant correlation between the metacognitive awareness and ruminative thought styles of the students of the faculty of sports sciences, and that metacognitive awareness is a significant predictor of ruminative thought.

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