

## Investigation of the Relationship Between Occupational Personality Types, 21st-Century Skills, and Teaching Motivation

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### Abstract

The current study was conducted to investigate the relationship between occupational personality types, 21st-century skills, and teaching motivation. The study was conducted in the descriptive relational survey model, one of the quantitative research methods. The study group consisted of all the students attending the Physical Education Teaching Department at Faculty of Sports Sciences of Muğla Sıtkı Koçman University. A total of 148 (F=59, M=89) students were included in the study. The questionnaire method was employed to collect the data in the study. The questionnaire consists of four parts: a personal information form in the first part and three scales in the following three parts. In the second part, there is the “21<sup>st</sup> Century Skills Self-Efficacy Perception Scale” consisting of 42 items, in the third part, there is the “Occupational Personality Types Inventory” consisting of 30 items and in the fourth part, there is the “Teaching Motivation Scale” consisting of 12 items. The SPSS v22 program package was used in the analysis of the collected data. As a result of the study, a significant correlation was found between occupational personality types and 21st-century skills self-efficacy perceptions, between the six personality types of occupational personality and intrinsic and extrinsic motivation, and between 21st-century skills self-efficacy perceptions and intrinsic and extrinsic motivation. According to the results of regression analyses, occupational personality types had a significant effect on intrinsic and extrinsic motivation.

Keywords: Occupational personality types, 21<sup>st</sup> century skills, teaching motivation, physical education teaching

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## Introduction

The concept of personality is frequently used in our daily lives (Güney, 2000). Personality development is expressed as a process that begins with the conception of a human being and continues until the end of life. The concept of “personality” which means the characteristic qualities or traits of an individual, originated from the practice of theatre actors wearing masks on stage (Morgan, 2011). Doğan (2013) defines personality as an element that differentiates a person from other people. Personality, like fingerprints, encompasses unique traits specific to an individual (Acar & Karavelioğlu, 2022). In other words, personality is the primary factor that shapes all emotions and behaviors of an individual (Bacanlı, İlhan, & Aslan, 2009; Burger, 2006).

One of the most frequently used personality definitions in the literature belongs to Feshbach. For Feshbach (YEAR), personality emerges as a result of being influenced by the environment in which a person lives. In other words, personality is formed through a combination of innate characteristics and the influences coming from the surrounding environment (Yücel & Taşçı, 2008: 687).

When the relevant literature is examined, it is seen that the definitions of the concept of personality are focused on 3 points (Tekçe, 2010).

1. Personality is composed of the entirety of social skills. All of the relationships a person develops with other people around him/her and the behaviors he/she exhibits constitute that person’s personality.
2. The impact a person has on others reflects that person’s personality.
3. All of the characteristics of a person, the relationships he/she establishes with his/her environment, and the behavioral tendencies that emerge as a result of interaction constitute personality.

The concept of profession has different definitions in many different sources. In the Dictionary of the Turkish History Board, the profession is defined as “A person’s work or field of thought which the person chooses and devotes himself/herself in order to earn his/her own living.” (TDK, 2022).

The field of work that a person chooses to survive and earn a living is defined as a profession (Özgüven, 1999). In this context, a profession is not only described as a means of financial gain but also as a path for self-actualization. People meet their self-actualization needs through professional activities as well as different activities. Profession is expressed as an element that has a wide impact and that directly affects a person’s life (Kaya, 1988).

Dr. John Holland is one of the prominent researchers in the field of profession and personality. Holland, who has conducted highly significant studies on career choice, states that “career choice is an expression of personality” and emphasizes the importance of harmony between individual and

occupation in career selection. According to Holland's personality theory, there is a relationship between the factors that shape personality and the environments in which professions are performed. In this context, a person's choice of profession is expressed as a reflection of that person's personality (Bulutlar & Kamaşak, 2010).

21st-century skills are a prominent issue bringing about significant changes in education around the world in the 21st century, which is called the information age. While some changes require the updating of education systems, some changes affect the qualifications that teachers who are an important element in education must have. In the 21st-century, a shift from a teaching-centric approach to a learning-centric approach is observed. In this process, teachers also need to improve themselves under the requirements of the age and keep up with innovations. In other words, teachers are expected to adopt a student-centered approach by innovations (Taşgın, 2015).

According to Orhan Göksün (2016), in the current era marked by developments and changes, there is a need to prioritize the education of individuals who can analyze and transform information, as well as solve existing problems for the benefit of society. All these competencies that individuals are required to have been referred to as 21st-century skills. Hotoman (2019) also emphasized the importance of having the skills of the century we live in to develop as a society and as an individual. He expressed the importance of educating creative people who can solve problems and have a critical mindset in order not to fall behind in the era.

Teachers are provided with the professional knowledge, skills, and attitudes during their undergraduate education and 21st-century skills are among the most important skills to be acquired during this period so that pre-service teachers can enter the profession with an awareness of these skills (Saçmalıoğlu, 2019). 21st-century skills, which are effective in many aspects of individuals' lives and career goals, can be acquired through education at all stages of education, and the acquisition of these skills is the responsibility of teachers. In this context, it is extremely important for teachers to have these skills and transfer them to learning processes (Anagün et al., 2016).

The concept of motivation, which is one of the most important issues in the business life of teachers or employees, is a concept that originated from the Latin word "movere", which means to move (Tınaz, 2013). There are different definitions of motivation in the literature (Ergun Özler, 2013; Seker, 2015).

According to Çüceloğlu (2019), motivation is expressed as a broad concept encompassing an individual's desires, wishes, needs, impulses, and other feelings. All living things in the world have needs that they need to meet to survive. However, people need to take action to meet these needs, and all activities carried out to take this action include the concept of motivation (Gümüş & Sezgin, 2012;

as cited in İşgörür, 2020). Motivation to teach refers to a process that determines what attracts people to teaching and how long they will stay in this profession (Han & Yin, 2016).

In line with this information, the purpose of this current study is to examine the effects of pre-service physical education teachers' occupational personality types and 21st-century skills on their teaching motivation. The research questions prepared within the scope of the purpose of the research are as follows.

1. Is there a significant relationship between professional personality types and 21st century competencies?
2. Is there a significant relationship between professional personality types and teaching motivation?
3. Is there a significant relationship between 21st century competencies and teaching motivation?
4. Is there a significant relationship between professional personality types and intrinsic motivation regression analysis?
5. Is there a significant relationship between professional personality types and extrinsic motivation regression analysis?
6. Is there a significant relationship between 21st Century competencies and intrinsic motivation regression analysis?
7. Is there a significant relationship between 21st Century competencies and extrinsic motivation regression analysis?

### **Research Method**

In this part, research method, population and sample, data collection tools and data analysis have been mentioned, respectively.

#### **Research Method**

The current study employed the relational survey model, one of the quantitative research methods. This model was preferred because it allows for the examination of the relationship between variables and their impact on each other (Kaya, Balay, & Göçen, 2012).

## **Population and Sample**

Since there was no problem in reaching the population of this study and the scope of the population was narrow, the complete census method was preferred instead of sampling (Ural & Kılıç, 2005). The sample of the study consisted of 148 (Female = 59, Male = 89) people.

## **Data Collection Tools**

In the study, the questionnaire method, one of the quantitative data collection techniques, was preferred to collect data. The questionnaire form consists of four parts: a personal information form and three scale forms. The personal information form consists of four questions to elicit information about the participants' gender, age, grade level, and satisfaction with the department. The second part of the questionnaire form is the "21st Century Skills Self-Efficacy Perception Scale" which consists of 42 items. In the third part, there is the "Occupational Personality Types Inventory" consists of 30 items, and in the fourth part, there is the "Teaching Motivation Scale" consisting of 12 items.

**21st Century Skills Self-Efficacy Perception Scale:** The "21st Century Skills Self-Efficacy Perception Scale" consisted of 42 items and 3 sub-dimensions were employed to determine the 21st-century skills of the pre-service physical education and sports teachers in the current study. The scale consists of three dimensions: learning and renewal skills, life and career skills, and information, media, and technology skills. The scale developed by Anagün et al. (2016) is a five-point Likert scale. The Cronbach reliability coefficient of the scale was found to be .89 in the scale development study.

**Occupational Personality Types Inventory:** In the study, the "Occupational Personality Types Inventory" developed by Atli and Keldal (2017) was used to determine the occupational personality types of the pre-service physical education and sports teachers. The inventory, which consists of 30 items and allows determining six personality types (Realistic, Entrepreneurial, Inquisitive, Social, Artistic, and Traditional), is in a nine-point Likert type scale. In the scale development study, the reliability coefficient of the Occupational Personality Types Inventory was found to be .72 for the realistic sub-dimension, .85 for the entrepreneurial sub-dimension, .81 for the inquisitive sub-dimension, .81 for the social sub-dimension, .77 for the artistic sub-dimension, and .78 for the traditional sub-dimension.

**Teaching Motivation Scale:** In the study, the "Teaching Motivation Scale" developed by Kauffman, Yılmaz-Soylu, and Duke (2011) was used to determine the teaching motivation of the pre-service physical education and sports teachers. The scale consists of 12 items. The scale measures participants' motivation in two sub-dimensions: intrinsic and extrinsic motivation. Higher scores taken from the scale indicate higher levels of teaching motivation. The reliability value was found to be .86 for the intrinsic motivation sub-dimension and .76 for the extrinsic motivation sub-dimension.

Cronbach’s alpha values were calculated for the reliability of the scales used and are presented in Table 1. Reliability analysis was calculated by the researcher based on the answers of 148 participants.

Table 1. Reliability Analysis Findings for the Scales

Dimensions	Cronbach’s Alpha Value	Number of Items
Learning and Renewal Skills	.921	16
Life and Career Skills	.884	18
Information, Media, and Technology Skills	.905	8
Realistic	.758	5
Entrepreneurial	.703	5
Inquisitive	.750	5
Social	.842	5
Artistic	.733	5
Traditional	.732	5
Intrinsic Motivation	.870	6
Extrinsic Motivation	.879	6
All the Scales		76

If the values obtained in the reliability analysis are between 0.60 and 0.80, we can evaluate the scale as “reliable” and if it is between 0.80 and 1.00, we can evaluate the scale as “highly reliable” (Gürbüz & Şahin, 2018). It seems that the reliability levels of the scales are suitable for research.

### Data Analysis

SPSS v22 package program was used in the analysis of the collected data. Reliability analysis was conducted to check the reliability of the measurement tools used in the study. Frequency and percentage analyses were used to analyze the data obtained from the personal information form. Pearson correlation was used to determine the relationship between the variables and regression analysis was used to determine the power of prediction.

Table 2. Findings from the Normality Analysis of the Scales

Dimensions	Skewness	Kurtosis
Learning and Renewal Skills	.291	-.372
Life and Career Skills	.746	.717
Information, Media, and Technology Skills	.561	-.624
Realistic	-.417	.158
Entrepreneurial	-.160	.432
Inquisitive	-.642	.372
Social	-.547	-.243
Artistic	-.607	-.397
Traditional	-.753	.258
Intrinsic Motivation	-1.040	.728
Extrinsic Motivation	-.695	.081

When Table 2 is examined, it is seen that the research data shows a normal distribution. Tabachnick and Fidell (2013) stated that the skewness and kurtosis values in the range of  $\pm 1.5$  mean that the required criterion for normality is met.

## Findings

In this part, includes the demographic findings of the research and findings regarding the hypotheses. Research findings are presented in tables and interpreted.

Table 1. Gender Distribution of the Participants

Variables	N	%
Female	59	39.9
Male	89	60.1
Total	148	100.0

When Table 3 is examined, it is seen that 39.9% of the participants are female and 60.1% are male.

Table 2. Age Distribution of the Participants

Variables	N	%
18-20 Years Old	81	54.7
21-24 Years Old	54	36.5
25-28 Years Old	13	8.8
Total	148	100.0

When Table 4 is examined, it is seen that 54.7% of the participants are in the age group of 18-20, 36.5% are in the age group of 21-24 and 8.8% are in the age group of 25-28.

Table 3. Grade Level Distribution of the Participants

Variables	N	%
1 <sup>st</sup> Grade	41	27.7
2 <sup>nd</sup> Grade	31	20.9
3 <sup>rd</sup> Grade	38	25.7
4 <sup>th</sup> Grade	38	25.7
Total	148	100.0

When Table 5 is examined, it is seen that 27.7% of the participants are 1st graders, 20.9% are 2nd graders, 25.7% are 3rd graders and 25.7% are 4th graders.

Table 4. Participants' Level of Satisfaction with the Department They Attend

Variables	N	%
Yes	125	84.5
No	23	15.5
Total	148	100.0

When the participants' level of satisfaction with the department they attend is examined, it is seen that 84.5% of the participants are satisfied while 15.5% are not satisfied. It can be said that the great majority of the participants are satisfied with the department they attend.

Table 5. Relationship between Occupational Personality Types and 21<sup>st</sup> Century Skills

	n: 148	Learning and Renewal Skills	Life and Career Skills	Information, Media and Technology Skills
Realistic	r	.071	.306**	.119
	p	.392	.000	.150
Entrepreneurial	r	.268**	.209*	-.083
	p	.001	.011	.313
Inquisitive	r	.302**	.155	.080
	p	.000	.059	.332
Social	r	.149	-.007	.005
	p	.070	.931	.949
Artistic	r	.157	.041	.013
	p	.057	.623	.877
Traditional	r	.025	.138	.064
	p	.766	.095	.442

\*\*p<0.01 \*p<0.05

According to the results of the correlation analysis, there is a positive and significant correlation ( $p<0.05$ ) between the realistic personality type and life and career skills ( $r: .306$ ), between the entrepreneurial personality type and learning and renewal skills ( $r: .268$ ) and life and career skills ( $r: .209$ ) and between the inquisitive personality type and learning and renewal skills ( $r: .302$ ). The existence of a positive correlation between the variables means that they increase or decrease together. There is no significant correlation between the social, artistic, and traditional personality types and any dimension of the 21st-century skills perception scale.

Table 6. Relationship between the Occupational Personality Types and Teaching Motivation

	n: 148	Intrinsic Motivation	Extrinsic Motivation
Realistic	r	.449**	.485**
	p	.000	.000
Entrepreneurial	r	.373**	.373**
	p	.000	.000
Inquisitive	r	.405**	.452**
	p	.000	.000
Social	r	.420**	.429**
	p	.000	.000
Artistic	r	.378**	.363**
	p	.000	.000
Traditional	r	.668**	.636**
	p	.000	.000

\*\* p<0.01

According to the results of the correlation analysis, there is a positive and significant correlation between all the six personality types and intrinsic and extrinsic motivation ( $p<0.05$ ). The personality type having the strongest correlation with the intrinsic motivation ( $r: .668$ ) and extrinsic motivation ( $r: .636$ ) sub-dimensions of teaching motivation was determined to be the traditional personality type. The existence of a positive correlation between the variables means that they increase or decrease together. It is seen that the correlations between the variables are in the range of 0.30-0.69 and at a medium level.

Table 7. Relationship between 21<sup>st</sup> Century Skills and Teaching Motivation

	n: 148	Intrinsic Motivation	Extrinsic Motivation
Learning and Renewal Skills	r	.115	.106
	p	.163	.200
Life and Career Skills	r	.182*	.190*
	p	.027	.021
Information, Media, and Technology Skills	r	-.252**	-.257**
	p	.002	.002

According to the results of the correlation analysis, there is a positive and significant correlation ( $p < 0.05$ ) between life and career skills and intrinsic motivation ( $r: .182$ ) and extrinsic motivation ( $r: .190$ ) and there is a negative and significant correlation ( $p < 0.05$ ) between knowledge, media and technology skills and intrinsic motivation ( $r: -.252$ ) and extrinsic motivation ( $r: -.257$ ). It is seen that the correlation between the variables is weak. While life and career skills and the sub-dimensions of teaching motivation increase or decrease together, information, media, and technology skills and the sub-dimensions of teaching motivation have a negative correlation, and as one increases, the other decreases.

Table 8. Regression Analysis on the Effect of Personality Types on Intrinsic Motivation

Variables	B	SH	$\beta$	t	P
Realistic	.013	.012	.085	1.116	.266
Entrepreneurial	.020	.014	.141	1.489	.139
Inquisitive	-.023	.017	-.152	-1.316	.190
Social	-.001	.014	-.006	-.051	.960
Artistic	-.012	.015	-.082	-.815	.416
Traditional	.114	.016	.710	6.967	.000
Constant	.435	.412	-	1.057	.293

$R^2 = .470$

Adjusted  $R^2 = .448$

F = 20.849

p = 0.000

*Dependent variable: Intrinsic Motivation*

When Table 10 is examined, it is seen that the simple regression analysis conducted to examine the effect of occupational personality types on intrinsic motivation is statistically significant ( $p < 0.05$ ). Occupational personality types positively affect intrinsic motivation and increase it at a moderate level. According to the analysis results, only the traditional personality type has a significant effect on intrinsic motivation. The adjusted  $R^2$  was found to be 0.448. According to this value, 45% of intrinsic motivation is explained by occupational personality types.

Table 9. Regression Analysis on the Effect of Personality Types on Extrinsic Motivation

Variables	B	SH	$\beta$	T	P
Realistic	.026	.013	.162	2.057	<b>.042</b>
Entrepreneurial	.010	.014	.071	.728	.468
Inquisitive	.006	.018	.037	.311	.756
Social	.002	.015	.015	.128	.898
Artistic	-.020	.016	-.131	-1.261	.210
Traditional	.091	.017	.558	5.311	<b>.000</b>

Constant	.170	.433	-	.394	.694
$R^2 = .435$					
Adjusted $R^2 = .411$					
F = 18.128					
p = 0.000					

Dependent variable: Extrinsic Motivation

When Table 11 is examined, it is seen that the simple regression analysis conducted to examine the effect of occupational personality types on extrinsic motivation is statistically significant ( $p < 0.05$ ). Occupational personality types affect extrinsic motivation at a medium level. According to the analysis results, realistic and traditional personality types have a significant effect on extrinsic motivation. The adjusted  $R^2$  value was found to be 0.411. According to this value, 41% of extrinsic motivation is explained by occupational personality types.

Table 10. Regression Analysis of the Effect of 21<sup>st</sup> Century Skills on Intrinsic Motivation

Variables	B	SH	$\beta$	T	p
Learning and Renewal Skills	.084	.203	.038	.411	.682
Life and Career Skills	.743	.255	.280	2.919	<b>.004</b>
Information, Media and Technology Skills	-.761	.176	-.355	-4.330	<b>.000</b>
Constant	3.996	1.022	-	3.910	.000
$R^2 = .145$					
Adjusted $R^2 = .127$					
F = 8.118					
p = 0.000					

Dependent variable: Intrinsic Motivation

When Table 12 is examined, it is seen that the simple regression analysis conducted to examine the effect of 21st century skills on intrinsic motivation is statistically significant ( $p < 0.05$ ). 21st century skills affect intrinsic motivation at a medium level. According to the analysis results, life and career skills and information, media and technology skills have a significant effect on intrinsic motivation. The adjusted  $R^2$  value was found to be 0.127, indicating that 13% of intrinsic motivation is explained by 21st century skills.

Table 11. Regression Analysis of the Effect of 21<sup>st</sup> Century Skills on Extrinsic Motivation

Variables	B	SH	$\beta$	T	p
Learning and Renewal Skills	.040	.206	.018	.195	.846
Life and Career Skills	.818	.258	.303	3.172	<b>.002</b>
Information, Media and Technology Skills	-.794	.178	-.364	-4.460	<b>.000</b>
Constant	3.820	1.035	-	3.691	.000
$R^2 = .153$					
Adjusted $R^2 = .136$					
F = 8.684					
p = 0.000					

Dependent variable: Extrinsic Motivation

When Table 13 is examined, it is seen that the simple regression analysis conducted to examine the effect of 21st century skills on extrinsic motivation is statistically significant ( $p < 0.05$ ). 21st century skills affect extrinsic motivation at a medium level. According to the analysis results, life and career skills and information, media and technology skills have a significant effect on extrinsic motivation.

The adjusted R<sup>2</sup> value was found to be 0.136, indicating that 14% of extrinsic motivation is explained by 21st century skills.

### **Discussions**

This study was conducted to examine the effects of pre-service physical education teachers' occupational personality types and 21st-century skills on their teaching motivation.

As a result of the correlation analysis conducted to reveal the relationship between the research variables, a positive and significant correlation was found between the realistic personality type and life and career skills, between the entrepreneurial personality type and learning and renewal skills, and the life and career skills and between the inquisitive personality type and learning and renewal skills.

According to another result of the study, there is a positive and significant correlation between the six personality types and intrinsic and extrinsic motivation. Akkuş (2023) similarly found that there is a significant correlation between personality types and motivation of pre-service teachers. Gedik (2023) found a negative correlation between personality and employee motivation. According to the results of the correlation analysis, there is a positive and significant correlation between life and career skills and intrinsic motivation and extrinsic motivation, and a negative and significant correlation between information, media, and technology skills and intrinsic motivation and extrinsic motivation.

According to the results of the regression analyses performed to determine the effect of independent variables on the dependent variable, occupational personality types have a significant effect on intrinsic and extrinsic motivation. According to the results of the study, 45% of intrinsic motivation and 41% of extrinsic motivation are explained by occupational personality types. According to the results of the analysis conducted to examine the effect of 21st-century skills on teaching motivation, 13% of intrinsic motivation and 14% of extrinsic motivation are explained by 21st-century skills. These results show that 21st-century skills are a significant predictor of teaching motivation. Bulut (2022) similarly found that there is a weak but significant correlation between the levels of using 21st-century teaching skills and teaching motivation.

The sample of the current study consists of pre-service physical education and sports teachers attending a faculty of sports sciences. Future studies can be conducted in different departments that have received formation training in sports sciences. This can enable the valuation of variables across different departments. The study was conducted only in Muğla province due to various restrictions. Comparative analyses can be made by including university students from different provinces in future studies. In this study, the relationship between pre-service teachers' 21st-century skills, teaching motivation, and occupational personality types was examined. In future studies, investigations can be conducted using different personality type scales.

## **Policy Implications**

Restructuring the training programs in accordance with the professional personality types of physical education and sports science teachers can enable these teachers to work more effectively and motivated. With programs customized according to teachers' interests and abilities, more efficient educational processes can be created for both themselves and their students. Integrating 21st century skills into physical education and sport science curricula can help teachers develop skills such as critical thinking, problem solving, collaboration and digital literacy. Adoption of these skills by teachers enables students to gain these competencies. Additionally, developing special strategies for physical education and sports science teachers to increase teaching motivation can increase teachers' professional satisfaction and create a more effective teaching environment. In this context, Ekici, Abide, Canbolat and Öztürk (2017) emphasize that it is necessary to equip individuals with more diverse and advanced competencies. Just having a diploma is no longer considered sufficient; certain skills are also required. These skills, defined as "21st century skills", must first be internalized by teachers in order to be transferred to students. Because the transfer of skills to students will be given by teachers during the learning process (Yalçın, 2018; Erten, 2020; Uyar & Çiçek, 2021). Teachers' possession of these skills and their ability to transfer them to students is a critical factor for the success of the education system. In this context, the education of the future should be shaped in a way that enables students to acquire 21st century skills.

Teachers, one of the most effective elements of the education system, are expected to constantly improve themselves in terms of teaching skills and competencies, follow the developments in the world of education, be innovative and strive to use new teaching methods. Mustafa and Othman (2010) state that this situation depends on the motivation of teachers. Teachers must have high motivation to acquire and maintain these skills and competencies. Highly motivated teachers will be more effective in providing students with 21st century skills. Therefore, developing and implementing strategies that will increase teachers' motivation is critical for the success of the education system. Educational policies should be designed to support teachers' motivation and contribute to their professional development. In this context, teachers equipping themselves with innovative methods and applying these methods in their classes will both increase the success of students and improve the general quality of the education system.

The study may help physical education and sports science teachers understand how to communicate more effectively with students with different professional personality types and how to motivate them. This information allows teachers to adapt their teaching methods to individual student needs. Developing career guidance and career planning services enables teachers to have more information about career paths suitable for their personality types, which contributes positively to teachers' career development. Making education policies more inclusive and flexible by taking into

account the individual differences of physical education and sports science teachers can make teaching processes more effective and efficient. The shift to personalized learning models can also improve teacher and student performance in physical education and sports science. This study can help train more motivated and competent teachers by increasing the contributions of physical education and sports science teachers to educational policies. Shaping education policies in line with these findings can contribute to creating a more efficient, motivating and talent-oriented educational environment.

### **Author Contribution and Conflict of Interest Declaration Information**

All authors contributed equally to the article. There is no conflict of interest.

### **Ethics Information**

This study was found appropriate in terms of research ethics by the decision of Muğla Sıtkı Koçman University Medicine and Health Sciences Ethics Committee dated 05.04.2022 and numbered 43.

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