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EVALUATION OF MEDICAL FACULTY STUDENTS' INTEREST IN CARDIOPULMONARY RESUSCITATION TRAINING IN THREE DIFFERENT EDUCATIONAL MODELS DURING THE PANDEMIC PERIOD

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ABSTRACT

Objective: *Cardiopulmonary resuscitation (CPR) is one of the pivotal steps of both basic and advanced cardiac life support. This study aimed to compare medical students' interest in CPR training across three different educational models.*

Material and Method: *In this study, students from Class 1, Class 2, Class 3, Class 5, and Class 6 at Ordu University Medical Faculty who had received theoretical or practical CPR training on a simulation manikin during the 2021-2022 academic year were included, provided they completed the survey questions in full and volunteered to participate in the study. Medical students were divided into three groups: those who received only theoretical training, those who received only online theoretical training, and those who received both online theoretical and practical training. In the practical training sessions, an applied CPR training model was utilized on simulation mannequins. A 15-item form assessing sociodemographic characteristics, a 5-item CPR knowledge test, and a 16-item course interest scale were administered.*

Results: *Among the 305 participants, 52.5% (n=160) were female and 47.5% (n=145) were male. Their average age was 21.60 (± 2.23). 282 students (92.5%) believed that merely teaching CPR theoretically was insufficient, 11 (3.6%) found it adequate, and 12 (3.9%) were undecided. Findings indicate that senior students, older students, those with prior CPR experience, and those who received both theoretical and simulation training exhibited significantly higher interest in the course ($p<0.001$).*

Conclusion: *Even during the pandemic, with appropriate precautions, practical training was found to enhance students' knowledge, interest, and success in learning CPR-one of the fundamental skills of the medical profession.*

Keywords: *Cardiopulmonary resuscitation, pandemic, CPR education.*

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TIP FAKÜLTESİ ÖĞRENCİLERİNİN PANDEMİ DÖNEMİNDE ÜÇ FARKLI EĞİTİM MODELİNDE KARDİYOPULMONER RESUSİTASYON EĞİTİMİNE İLGİSİNİN DEĞERLENDİRİLMESİ

ÖZET

Amaç: Kardiyopulmoner resüsitasyon (CPR), hem temel hem de ileri kardiyak yaşam desteğinin en önemli basamaklarından birisidir. Üç ayrı eğitim modelinde CPR eğitimi alan tıp fakültesi öğrencilerin CPR dersine olan ilgilerinin karşılaştırılması amaçlandı.

Materyal ve Metot: Bu çalışmaya Ordu Üniversitesi Tıp Fakültesi'nde 2021-2022 yılı içerisinde teorik ya da simülasyon maketi üzerinde pratik CPR eğitimi alan Dönem 1, Dönem 2, Dönem 3, Dönem 5 ve Dönem 6 öğrencileri arasından anket sorularını eksiksiz dolduran ve çalışmaya katılmaya gönüllü olan öğrenciler dahil edildi. Tıp fakültesi öğrencileri, CPR dersinde sadece yüzyüze teorik eğitim alanlar, sadece online teorik eğitim alanlar ve hem teorik hem de simülasyon uygulamalı pratik eğitim modeli ile eğitim alanlar olarak üç gruba ayrıldı. 15 maddelik sosyodemografik özellikleri, 5 maddelik CPR bilgisini değerlendiren form ve 16 maddelik derse ilgi ölçeği formu uygulandı.

Bulgular: Çalışmaya katılan 305 kişinin %52,5'i (n=160) kadın, %47,5'i (n=145) erkekti. Ortalama yaşları 21,60 (±2,23) idi. 282 öğrenci (%92,5) CPR eğitiminin yalnızca teorik model üzerinden verilmesinin yeterli olmadığını, 11 öğrenci (%3,6) yeterli olduğunu belirtirken 12 öğrenci (%3,9) bu konuda kararsız olduğunu belirtti. Son üç sene öğrencilerinin, yaşı daha büyük öğrencilerin, CPR deneyimi olanların ve teorik ve simülasyon eğitimini bir arada alan öğrencilerin derse ilgilerinin istatistiksel olarak anlamlı yüksek olduğu tespit edilmiştir (p<0,001).

Sonuç: Pandemi döneminde olsa dahi uygun tedbirler ile pratik eğitimin, hekimlik mesleğinin en temel becerilerinden olan CPR uygulamalarının öğrenilmesinde başarıyı arttırdığı görülmüştür.

Anahtar kelimeler: Kardiyopulmoner Resüsitasyon, pandemi, CPR eğitimi.

INTRODUCTION

Cardiac arrest is a medical emergency characterized by the cessation of respiratory and circulatory functions due to various causes. Cardiopulmonary resuscitation (CPR) is one of the pivotal steps of both basic and advanced cardiac life support. Upon recognizing cardiac arrest and activating emergency medical services, CPR should be initiated immediately. Any delay in initiating CPR can lead to a significant decrease in survival rates. One of the objectives of medical faculties, which undertake the responsibility of training physicians, is to produce individuals capable of effectively and correctly administering resuscitation.[1]

Medical education is believed to have originated around 500 B.C. Evidence in Greek and Roman sources indicates that the first medical school was established during this period in the south of present-day Italy.[2] At that time, education was conducted through practical training based on the master-apprentice relationship and was supported by theoretical lessons.[3] During the Middle Ages, practical courses were attempted to be conducted with animal dissections.[4] The development of systematic modern medicine progressed in France and Germany during the 19th century. Practical applications in courses such as chemistry, physiology, pathology, and bacteriology gained continuity, laying the foundations for today's modern medicine.[5] Technological advancements and new discoveries in the field of medicine have changed the forms and opportunities of applied education over time.

In 1874, Moritz Schiff demonstrated the first open heart massage by compressing the heart in open thorax in dogs, showing carotid filling.[6] In 1883, Koening became the first person to successfully perform closed heart massage by pressing the apex of the heart in a patient anesthetized with chloroform during an arrest.[7] Modern CPR practices were described by Kouwenhoven and colleagues in 1960, and the first modern CPR guide was published by the National Academy of Science National Research Council in 1966. Subsequent work continued under the leadership of the AHA. Various mannequins have been developed for CPR training, and practical CPR training has been given to millions of people nationally and internationally from the 1970s to the present.[8-10]

In medical education, theoretical and practical applications are concurrently executed to minimize the risk of errors in physicians' procedures. With the

advancements in technology, simulation practices play a vital role in practical trainings to reduce errors, prevent ethical breaches, avoid causing harm to the patient, and enhance physicians' clinical decision-making skills.[11,12]

In the initial years of the pandemic, there was a perceived decline in students' interest in lessons at medical faculties due to the reduction of face-to-face classes and the suspension of hands-on practical training to prevent the spread of the COVID-19 infection. CPR is an essential part of medical education. To increase the students' diminished interest during the pandemic, CPR training was conducted practically on simulation manikins in smaller group settings. This study aimed to compare medical students' interest in CPR training across three different educational models and to heighten their awareness on the topic during their classes.

MATERIAL AND METHOD

Study Design

In this study, which took place from 01.03.2022 to 01.07.2022, male and female students from Class 1, Class 2, Class 3, Class 5, and Class 6 at Ordu University Medical Faculty who had received theoretical or practical CPR training on a simulation manikin during the 2021-2022 academic year were included, provided they completed the survey questions in full and volunteered to participate in the study. The inclusion criteria consisted of being above the age of 18, being a student at Ordu University Medical Faculty, not having any mental illness or condition that could affect decision-making capacity, volunteering to participate in the survey, and having taken at least one CPR lesson through theoretical or practical applications. Those who did not meet these criteria were excluded from the study.

Medical students were divided into three groups: those who received only theoretical training, those who received only online theoretical training, and those who received both online theoretical and practical training. In the practical training sessions, an applied CPR training model was utilized on simulation mannequins. At the study site, the emergency medicine department provided simulation-based CPR training sessions. Students who participated in either theoretical or practical CPR courses were presented with an anonymous questionnaire consisting of 15-items that assessed their sociodemographic characteristics and 5-items level of knowledge about CPR, their perspectives on the CPR course, and post-course evaluation of CPR training. Additionally, a 16-item scale aimed at measuring student interest in the course was presented through Google Forms.

The course interest scale is a 5-point Likert-type measurement tool consisting of 16 items and two sub-dimensions developed by Mazer.[13] There are no reverse-coded items in the scale. The maximum and minimum scores that can be obtained from the scale are 45 and 9 for the affective interest sub-dimension, and 35 and 7 for the cognitive interest sub-dimension, respectively. In the Turkish adaptation of the scale, Cronbach's alpha reliability coefficients were reported as 0.95 for the affective interest sub-dimension and 0.88 for the cognitive interest sub-dimension.[14] In our study, the alpha reliability coefficient was found to be 0.97 for the affective sub-dimension and 0.94 for the cognitive interest sub-dimension.

Ethics Committee Approval

The study protocol was approved by the Clinical Research Ethics Committee of the Ordu University (decision no: 2022/48, date: 25.02.2022).

Statistical Analysis

Statistical analysis was performed using IBM SPSS Statistics v20. The homogeneity of the groups was determined using the Shapiro-Wilks test. Along with descriptive statistics, the Chi-square test was used for comparing categorical data. The Independent samples t-test was used for comparing two groups, and one-way ANOVA was utilized for comparing more than two groups. p values <0.05 were considered statistically significant. Tukey test was used to compare pairwise subgroups of one-way ANOVA. Tukey's HSD (honestly significant difference) test or Bonferroni corrected Mann–Whitney–Wilcoxon tests were used for posthoc multiple comparisons when significant differences were identified by ANOVA. Multiple linear regression analysis was performed to determine the relationship between independent variables and the scale.

RESULTS

Out of the 307 individuals invited to participate in the study, two declined. Among the 305 participants, 52.5% (n=160) were female, and 47.5% (n=145) were male, with an average age of 21.6 (±2.23). Fourth-year students were excluded as their curriculum did

Table 1. Distribution of training type according to demographic data

	Non-online educated		Online educated without practical training		Online and practical educated		X^2	*p* Value
	n	%	n	%	n	%		
Age							117.90	<0.001
Under 20 years	52	47.7%[c]	46	42.2%[b]	11	10.1%[a]		
21-25 years	8	4.3%[c]	66	36.1%[b]	109	59.6%[a]		
Over 26 years	0	0[b]	1	7.7%[b]	12	92.3%[a]		
Gender							0.27	0.87
Male	28	19.3%	52	35.9%	65	44.8%		
Female	32	20.0%	61	38.1%	67	41.9%		
Student's Class							134.34	<0.001
First three classes	58	29%	103	51.5%	39	19.5%		
Last two classes	2	2%	10	9.5%	93	88.5%		

The table is a chi-square table. Double and triple groups were compared together. [a,b,c] demonstrates statistical differences in multiple comparison analyses (post-hoc analyses).

Non-online educated: only theoretical training

Table 2. The distribution of correct and incorrect answers given by students to knowledge questions, depending on the training model they received

		Non-online educated n (%)	Online educated without n (%)	Online and practical educated n (%)	X^2	*p*
1.I administer a shock with a defibrillator in Pulseless Ventricular Tachycardia/ Ventricular Fibrillation.	Correct Answers	30 (9.8)	56 (18.4)	100 (32.8)	21.35	<0.01
	Incorrect Answers	30 (9.8)	57 (18.7)	32 (10.5)		
2.I administer a shock with defibrillation in Asystole/Pulseless Electrical Activity.	Correct Answers	33 (10.9)	73 (23.9)	109 (35.7)	18.07	<0.01
	Incorrect Answers	27 (8.85)	40 (13.05)	23 (7.6)		
3.I don't check circulation by feeling the pulse from the femoral artery.	Correct Answers	25 (8.2)	52 (17)	57 (18.7)	0.35	0.83
	Incorrect Answers	35 (11.5)	61 (20)	75 (24.6)		
4.Continuous compression after the first shock in ventricular fibrillation is more beneficial than the second shock.	Correct Answers	37 (12.1)	68 (22.3)	109 (35.8)	17.16	<0.01
	Incorrect Answers	23 (7.5)	45 (14.8)	23 (7.5)		
5.I administer the initial dose of Amiodarone as 300 mg IV push in Pulseless VT.	Correct Answers	33 (10.8)	56 (18.4)	105 (34.4)	26.04	<0.01
	Incorrect Answers	27 (8.85)	57 (18.7)	27 (8.85)		

Non-online educated: only theoretical training

not include CPR training that year. Of the participants, 86 (28.2%) were first-year students, 1 (0.3%) were second-year students, 113 (37%) were third-year students, 71 (23.3%) were fifth-year students, and 34 (11.1%) were sixth-year students. All these students received CPR training. Of these students, 245 (80.3%) reported receiving online education due to the COVID-19 pandemic. Out of these students, 132 (43.3%) stated that they received practical training after online education, while 113 (37.0%) declared not receiving any practical training. Among the participants, 48 (15.7%) reported never having received CPR training, while 124 (40.7%) received it once, 96 (31.5%) received it 2-3 times, and 37 (12.1%) stated they received this training more than three times. A significant difference was detected in terms of the average ages of the groups ($p<0.001$). The students' experiences, knowledge levels, and perspectives regarding CPR training are presented in Table 1.

Of the 305 students, 73 (23.9%) had experienced CPR, while 232 (76.1%) had not. A total of 298 students (97.7%) believed that CPR training is essential in medical practice, whereas 7 (2.3%) thought it was unnecessary. A total of 283 students (92.8%) felt responsible for learning CPR, while 22 (7.2%) did not.296 students (97.0%) felt that diverse educational materials and activities would increase interest in CPR courses. In contrast, 2 (0.7%) disagreed, and 7 (2.3%) were undecided. 282 students (92.5%) believed that merely teaching CPR theoretically was insufficient, 11 (3.6%) found it adequate, and 12 (3.9%) were undecided. During the pandemic, 20 students (6.6%) thought that receiving CPR training on a simulator was hazardous, while 237 (77.7%) did not. 48 (15.7%) were uncertain. After the CPR training, 76 students (24.9%) felt competent in cardiopulmonary resuscitation, 125 (41%) did not feel adequate, and 104 (34.1%) were undecided. 136 students (44.6%) believed they could perform CPR if necessary after the training, 70 (23%) did not, and 99 (32.5%) were uncertain.

In this brief knowledge assessment of participating of all students, 186 students (61%) correctly answered that a defibrillator shock should be given in Pulseless Ventricular Tachycardia/Ventricular Fibrillation, while 119 (39%) answered incorrectly. 215 students (70.5%) knew not to administer a shock in pulseless electrical activity, but 90 (29.5%) got it wrong. 171 students (56.1%) knew that circulation checks shouldn't be performed on the femoral artery and answered correctly, whereas 134 (43.9%) answered incorrectly.

After the first shock in ventricular fibrillation, 214 students (70.2%) knew that continued compression is more beneficial before the second shock, while 91 (29.8%) did not. 194 students (63.6%) correctly identified that the initial dose of amiodarone in Pulseless VT should be 300 mg IV, but 111 (36.4%) answered incorrectly. The distribution of correct and incorrect answers given by students to knowledge questions, depending on the training model they received, is presented in Table 2. In questions 1, 2, 4, and 5, statistically significant higher numbers of correct answers were observed in the group receiving both online and practical training (p<0.05, Table 2). Additionally, when comparing the answers given by students according to their education years, it was found that the last two classes had a statistically higher number of correct answers to questions 1, 2, 4, and 5. (p<0.05, Table 3).

Distribution of the "Interest in Course Scale" total and sub-dimension scores according to demographic data and educational status are shown in Table 4. In our study, the average score of the "Interest in Course Scale" was 62.96±15.91. The average score for the cognitive sub-dimension of the scale was 27.79±6.48, and for the affective sub-dimension, it was 35.17±9.96. Students in their final years, older students, those with prior CPR experience, and those who received both theoretical and simulation training demonstrated significantly higher interest in the course (p<0.001). In the post-hoc analysis, a statistically significant difference was detected between the course interest scale of students in the 18-20 age group and other age groups (p<0.001). A statistically significant difference was found between the course interest of students who received theoretical and simulation education model and those who received only theoretical and only simulation education (p<0.001). A statistically significant difference was detected in the comparison of course interests of 'those who considered themselves competent and undecided' and 'those who do not consider themselves competent' in CPR after the training (p<0.001). A significant difference was detected when comparing the interest of the students who answered 'Believe' and 'Undiced' to the question 'Belief in the Ability to Apply CPR when needed' and the students who answered 'Do not believe' (p<0.001). In the multiple regression analysis, the situation of previously receiving CPR training, the training model, the student's level of knowledge, and the student's class explained 14% of the variance in the interest scale of the course (r=0.142). When looking at the subscales, the variance of the affective interest scale is explained by 12% (r=0.126), and the variance of the cognitive interest subscale is explained by 14% (r=0.140). The developed training models were found to be statistically significant particularly in terms of the situation of previously receiving CPR training and the form of the training model regarding the interest scale of the course (r^2=0.153, F=13.568, p<0.01), the cognitive interest scale (r^2=0.151, F=13.385, p<0.01), and the affective interest scale (r^2=0.137, F=11.939, p<0.01). A one-unit standard deviation change in the situation of receiving CPR training before education and a one-unit standard deviation change in the form of the training model lead to an increase in the total score standard deviation of the interest scale of the course by 0.18 and 0.21 units, respectively (Table 5).

Table 3. The comparison of answers given by students to knowledge questions based on their education years

		First Three Classes n (%)	Last Two Classes n (%)	X^2	p
1.I administer a shock with a defibrillator in Pulseless Ventricular Tachycardia/ Ventricular Fibrillation.	Correct Answers	84 (42.0)	102 (97.1)	87.99	p<0.001
	Incorrect Answers	116 (58.0)	3 (2.8)		
2.I administer a shock with defibrillation in Asystole/Pulseless Electrical Activity.	Correct Answers	123 (61.5)	92 (87.6)	22.58	p<0.001
	Incorrect Answers	77 (38.5)	13 (12.4)		
3.I don't check circulation by feeling the pulse from the femoral artery.	Correct Answers	105 (52.5)	66 (62.8)	2.99	p=0.83
	Incorrect Answers	95 (47.5)	39 (37.2)		
4.Continuous compression after the first shock in ventricular fibrillation is more beneficial than the second shock.	Correct Answers	115 (57.5)	99 (94.3)	44.50	p<0.001
	Incorrect Answers	85 (42.5)	6 (6.7)		
5.I administer the initial dose of Amiodarone as 300 mg IV push in Pulseless VT.	Correct Answers	103 (51.5)	91 (86.6)	36.78	p<0.001
	Incorrect Answers	97 (49.5)	14 (13.4)		

First Three Classes: 1st, 2nd and 3rd degree medical Students, **Last Two Classes:** 5th, 6th degree medical students

DISCUSSION

The number of medical schools and the quality of education vary in all countries around the world. As of 2021, there are 111 medical faculties in Türkiye, with a quota of 16,858.[15] While the number of medical faculties in our country is high, it is a fact that not all medical faculties have the same capacity, infrastructure, and educational opportunities. In addition, educational

Table 4. Distribution of the "Interest in Course Scale" total and sub-dimension scores according to demographic data and educational status

	Affective Interest		Cognitive Interest		Total Scale Score	
	Mean±SD	*p*	Mean±SD	*p*	Mean±SD	*p*
Student's Class						
First three classes	33,27±10.59	<0.001	26.57±6.77	<0.001	59.84±16.81	<0.001
Last two classes	38,81±7.54		30.10±5.19		68.91±12.01	
Age Range						
18-20	28.44±13.23[a]		23.40±7.79[a]		23.40±7.79[a]	
21-25	35.43±9.37[b]	<0.001	27.67±6.29[b]	<0.001	27.67±6.29[b]	<0.001
26-30	37.37±8.02[b]		29.48±6.48[b]		29.48±5.33[b]	
CPR Experience						
Have	37.95±8.00	0.01	30.19±4.77	0.001	68.14±12.03	0.004
Do not have	34.30±10.40		27.03±6.77		61.33±16.64	
Training Method						
Only Theoretical	31.85±11.35[a]		25.59±7.11[a]		57.44±17.97[a]	
Only Simulation	27.00±6.68[a,b]	<0.001	19.50±7.32[a]	<0.001	46.50±12.76[a]	<0.001
Theoretical and Simulation	38.15±7.62[b]		29.82±5.03[b]		67.98±11.92[b]	
Self-Assessment after Training in CPR						
Those who consider themselves competent	38.75±6.17[a]		30.26±4.30[a]		69.01±9.99[a]	
Those who do not consider themselves competent	30.96±11.97[b]	<0.001	24.65±7.45[b]	<0.001	55.61±18.82[b]	<0.001
Undecide	37.63±7.58[a]		29.75±4.84[a]		67.38±11.63[a]	
Belief in The Ability to Apply CPR when Needed						
Believe	38.10±6.51[a]		29.76±4.59[a]		67.87±10.60[a]	
Do not believe	25.8±12.15[b]	<0.001	21.06±7.22[b]	<0.001	46.86±18.66[b]	<0.001
Undecided	37.78±8.16[a]		29.83±4.76[a]		67.61±12.03[a]	

CPR: Cardio pulmonary resuscitation, **SD:** standard deviation
The variance test was used to compare three groups.
The t test was used to compare paired groups.
[a,b] demonstrates statistical differences in multiple comparison analyses (post-hoc analyses).

Table 5. Multiple linear regression analysis results regarding the relationship between the Interest Scale of the Course and the independent variables

	Unstandardized Coefficients		Standardized Coefficients	t	*p*	% 95 Confidence Interval	
	ß	S.E	ß			Lower Bound	Upper Bound
Previous CPR training status	3.345	1.175	0.188	2.847	0.005	1.033	5.657
Training model	3.524	0.973	0.219	3.622	0.001	1.609	5.438
Student's knowledge level	1.551	0.846	0.121	1.833	0.068	-0.114	3.216
Student's class	-0.405	0.626	-0.044	-0.646	0.519	-1.637	0.828

Dependent Variable: Total scale score, **CPR:** Cardio pulmonary resuscitation, **ß:** beta coefficent; represent estimated change in the dependent variable for a one-unit change in predictor variable, **S.E:** standart error

institution administrators take measures regarding the curriculum, education model, quality of education, and attracting students' interest in education. For many years, simulation practices have been utilized to make the administration of CPR – a significant aspect of the art and practice of medicine – more effective and accurate. Practical lessons, which are an indispensable part of the curriculum, strengthen theoretical training in modern medical education. However, the Covid-19 pandemic posed new challenges in medical education. During the pandemic, face-to-face education was suspended, and online education was used as an alternative to maintain students' interest and continuity in the courses. While theoretical lessons in medical faculties continued online, practice-based education was generally postponed until after the pandemic.[16,17] Our study was conducted among three groups of students: those who received online education during the Covid-19 pandemic, those who received both online and practical training, and those who received

only practical training without online education. 97.7% of the participating students believe that CPR training is necessary for medical practice, and 97% believe that various educational materials and activities in the CPR course increase interest in the course. Especially in medical faculties, ensuring the continuity and interest of practical training, particularly in vital courses like CPR, is extremely important for physicians' professional success and the well-being of the patient. This is because delayed and incorrect application techniques in daily medical routines adversely affect CPR results.

Furthermore, while CPR training is supported by theoretical lessons, the time allotted for practical training has decreased during the pandemic. Technical difficulties experienced in online training and the higher risk of Covid-19 transmission during CPR may have reduced students' interest in CPR training. 6.6% of the students who participated in the study believe that training on a simulator mannequin during the pandemic is dangerous for their health. Given the high rate of Covid-19 vaccination in our region at the time of the study, the high level of precaution in the hospital, and a period when the disease is better understood, we believe this percentage is low. Nevertheless, in and after the Covid-19 period, new methods have been sought for remote training due to the fear of transmission. One of these methods is the use of applications with virtual glasses microvideo.[18]

In a study conducted at GATA in 2011, a significant portion of fifth-year students who reported that they could not practice sufficiently attributed this to their lack of interest.[19] In the study conducted by Gündoğan *et al.* which emphasized that providing only theoretical CPR training would not be sufficient, it was noted that after CPR training, the knowledge level of intern doctors was statistically significantly higher than that of trainee doctors.[20]

Concerning the importance of practical applications in CPR training, Ballestaros and colleagues conducted a prospective study comparing students who received only theoretical CPR training and those who received both theoretical and practical training. As a result, it was determined that the knowledge level was statistically significantly higher in the group that received both theoretical and practical training.[21]

Accordingly Özden *et al*' study, it was determined that the knowledge level after providing practical training with simulation mannequins was statistically significantly higher than the knowledge level before providing practical training with simulation mannequins.[22] In a CPR mannequin study conducted by Ahmad A. and colleagues in 2010, it was found that high-quality simulation training supported by realistic scenarios resulted in statistically significantly higher levels of CPR knowledge and skills compared to low-quality simulation training.[23] In a study comparing the success rates of procedures in CPR simulation training among paramedic students conducted by Tarsuslu and colleagues, simulation training was found to have a statistically significant positive effect on procedural success.[24] Suseel *et al.* comparing three different training models in first-year medical students, it was found that the group trained with simulation mannequins had statistically significantly higher CPR knowledge levels compared to groups trained only with theoretical knowledge and animation videos.[25] In our study, it was seen that training with simulation models increased their interest in the course and improved their knowledge levels.

Limitations

The limitation of this study is the inability to obtain an opinion on whether or not interest in the course decreased during the pandemic due to the absence of any study or data prior to the pandemic period to compare with our study's data.

CONCLUSION

In light of the above information and data, we believe that practical training, which increases student knowledge and interest, enhances success in learning CPR applications, one of the fundamental skills of the medical profession. Even during the pandemic, we believe that ensuring the continuity of practical training by using face-to-face training with appropriate precautions or alternative methods will guide new medical candidates in fulfilling the requirements of medical education.

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*The authors declare that there are no conflicts of interest.

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