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Art-Based Special Study Module: Improving Visual Thinking and Communication Skills of Medical Students

Sanat Temelli Özel Çalışma Modülü: Tıp Öğrencilerinin Görsel Düşünme ve İletişim Becerilerinin Geliştirilmesi

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Abstract

Aim: Visual arts have been incorporated into medical education in different ways. The arts have been successfull in enhancing tolerance for ambiguity, fostering, empathy, and holistic views of medical students of all levels. Physical examination is a fundamental part of clinical diagnosis. A proper observation can provide critical information for the diagnostic evaluation and accuracy of treatment. The Special Study Module (SSM) is an educational method in which students are given the opportunity to study, research, and have experience in their own areas of interest. This training method places emphasis on changing students' attitudes towards self-learning techniques and other skills such as teamwork, problem solving, observation, communication, and presentation. In this study, we aimed to investigate the relationship between art and the skills to be a good physician, such as the development of observational skills in medical education.

Methods: This is a survey-based prospective study. Second-year medical students enrolled in the "Medicine and Art History" Special Study Module (SSM), were included in the study. Demographic data was collected. Before and after the SSM period (24 weeks), students completed a survey on the impact of art on medical education. Groningen Reflection Ability Scale (GRAS) and Communication Skills Attitude Scale (CSAS) were administered. Data were analyzed using the statistical program SPSS v.22.

Results: While the total GRAS score was 75 before the SSM, it increased to 79 after the SSM. The rate of students who completely agreed with the statement "I must have good communication skills to be a good doctor" was 50% before the SSM, and it increased to 80% after the SSM. Before the SSM, 80% of the students stated that they did not use art regularly to learn medical concepts, 20% stated that they were

Keywords:
Medical Education, Art-Based, Special Study Module, Visual Learning

Anahtar Sözcükler:
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undecided. After the SSM, 60% of the students stated that they would use art regularly to learn medical concepts.
Conclusions: In conclusion, the results of this innovative study are encouraging. All students considered art to be a valuable tool to learn medicine. Art-based medical education contributed significantly to students' communication skills, and observation skills when the pre- and post-module surveys were compared. Reflection ability and observational skills are essential in providing professional collaboration and working in a team. We believe that art can help medical students to become better clinical observers and improve personal and professional development as well as to be an empathetic person.

Özet
Amaç: *Görsel sanatlar, tıp eğitimine farklı şekillerde dahil edilmiştir. Sanat, her seviyedeki tıp öğrencisinin empati, belirsizliğe tolerans ve bütüncül görüşlerini geliştirmede başarılı olmuştur. Fizik muayene klinik tanının temel bir parçasıdır. İyi bir gözlem, tanısal değerlendirme ve tedavinin doğruluğu için kritik bilgiler sağlayabilir. Özel Çalışma Modülü (ÖÇM), öğrencilere kendi ilgi alanlarında çalışma, araştırma ve deney yapma fırsatı verilen bir eğitim yöntemidir. Bu eğitim yöntemi, öğrencilerin kendi kendine öğrenme tekniklerine ve takım çalışması, problem çözme, gözlem, iletişim ve sunum gibi diğer becerilere yönelik tutumlarını değiştirmeye önem verir. Bu çalışmada, sanatın tıp eğitimi ile olan ilişkisini araştırmayı amaçladık.*
Yöntem: *Bu çalışma, ankete dayalı prospektif bir araştırmadır. Çalışmaya "Tıp ve Sanat Tarihi" ÖÇM'ne kayıtlı 2. sınıf tıp fakültesi öğrencileri dahil edildi. Demografik veri toplandı. Sanat ve tıp eğitimi arasındaki ilişkiyi incelemek için anket yapıldı. Groningen Yansıtma Becerisi Ölçeği (GRAS) ve İletişim Becerileri Tutum Ölçeği (CSAS) yapıldı. Veriler istatistiksel program SPSS v.22 kullanılarak analiz edildi.*
Bulgular: *GRAS toplam puanı ÖÇM öncesi 75 iken, ÖÇM sonrası 79'a yükseldi. "İyi bir doktor olmak için iyi bir iletişim becerisine sahip olmalıyım" önermesine tamamen katıldığını belirten öğrencilerin oranı ÖÇM öncesi %50 iken, ÖÇM sonrasında bu oran %80'e yükseldi.*
ÖÇM'den önce öğrencilerin %80'i tıbbi kavramları öğrenmek için sanatı düzenli olarak kullanmadığını, %20'si kararsız olduğunu belirtti. SSM'den sonra öğrencilerin %60'ı tıbbi kavramları öğrenmek için sanatı düzenli olarak kullanacaklarını söyledi.
Sonuç: *Gözlem becerisi, bir klinisyenin temel aracıdır ve uygulama yoluyla geliştirilebilir. İletişim becerisi tıp öğrencileri için önemli bir yeterliliktir. Bu yenilikçi çalışmamızın sonuçları cesaret vericidir. Tüm öğrenciler sanatı tıp öğrenmek için değerli bir araç olarak gördü. Özel çalışma modülü öncesi ve sonrası anketler karşılaştırıldığında, sanat temelli tıp eğitimi öğrencilerin iletişim becerilerine ve gözlem becerilerine önemli ölçüde katkıda bulunmuştur. Yansıtma yeteneği ve gözlem becerileri, profesyonel iş birliği sağlamada ve birtakım olarak çalışmada önemlidir. Sanatın, tıp öğrencilerinin daha iyi klinik gözlemciler olmalarına, kişisel ve profesyonel gelişimlerinin yanı sıra empati kurabilmelerine yardımcı olabileceğine inanıyoruz.*

INTRODUCTION

Visual arts have been included in medical education with different methods in recent years. It has been successful in enhancing the empathy, tolerance for ambiguity, and communication skills of medical students (1, 2). Artworks serve as important tools for understanding the natural history of diseases (3). There are many studies showing that the use of pedagogical methods including artistic practices such as Visual Thinking Strategies (VTS) is beneficial in medical education, and many medical schools have started to include visual arts education in their curricula (4, 5).

Physical examination is a fundamental part of clinical diagnosis. A good observation can provide critical information for the diagnostic evaluation and accuracy of treatment (6, 7). VTS is an art-based education method that aims

to teach visual literacy, critical thinking, and communication skills through the facilitation of visual art discussions (8). VTS is a constructivist-based technique developed by cognitive psychologist Abigail Housen and art educator Philip Yenawine to teach students the aesthetic perspective (9, 10, 11). VTS examines students' visual artworks; it enables the development of critical, creative, and aesthetic thinking skills (4). It is a method used in classrooms and museums to teach visual literacy, communication skills, and critical thinking (9). One of the purposes of using VTS in medical education is that students can better observe their patients; increase the awareness of patients about their clinical condition; to develop skills such as inspection, physical examination, and diagnosis (4, 5).

The Special Study Module (SSM) is an educational method in which students are given the opportunity to study, research, and experiment in their own areas of interest (12). It is a student-centered system that changes the traditional understanding of education, offering the opportunity to go beyond the basic curriculum by examining their special interests in more depth (13). Through this method, students learn the spirit of teamwork, and by learning the basic principles of scientific methodology such as literature review and interpretation of research results; they gain experience in writing articles, preparing posters, and oral presentations (12). Another important aim of the SSM method is to develop the student's self-learning skills; It is to raise an individual who is ready for lifelong learning, renewing themself and updating their knowledge (13).

In this study, we aimed to investigate the relationship between art and medical education. For this reason, it was learned who the artists with diseases were and their life. The importance of art in medical education was tried to be understood by examining the artworks related to diseases.

METHODS

Special Study Module (SSM)

SSMs are an important part of the medical curriculum at Mugla Sitki Kocman University Faculty of Medicine. Within our medical school, second-year medical students complete SSM which aims providing students with basic research skills such as information access, resource use, analysis, and reporting while deepening their knowledge. This training method places emphasis on changing students' attitudes towards self-learning techniques and other skills such as teamwork, problem solving, observation, communication, and presentation. Modules are implemented based on small group work. Our students set their topics according to their preferences among the study titles offered by the academic staff. Student groups are gathered periodically under the supervision of the responsible academic staff to discuss and share information about the process.

Participants

From December 2021 to May 2022, total 212 second-year medical students attended SSM for 24 weeks at Mugla Sitki Kocman University Faculty of Medicine. Students were given a list of forty-five SSMs to choose from and submitted their requests in order of preference. A committee consisting of medical faculty members made the placement by taking into account the students' preferences. Ten of these students were enrolled in "Medicine and Art History" SSM. This SSM was related to artists and their diseases, art observations, and diseases in artworks. Observation exercises, group discussions, and brainstorming periods in this lecture were facilitated by tutors (H.E. and E.G.) using VTS technique.

Visual Thinking Strategies (VTS)

The goals of VTS technique are improving problem-solving, observation, critical thinking, empathy, and teamwork (5). In our study, students observed artworks for ten minutes and

the following questions were asked: (i) What is going on in this picture?, (ii) What makes you say that?, and (iii) What else do you see? The artistic, historical, and medical value of the artwork was also briefly discussed at each VTS session (5, 14).

Study Design

We used a prospective study design with pre- and post-SSM evaluations and data collection to assess the impact of "Medicine and Art History" SSM on second-year medical students. Before and after the SSM period (24 weeks), students completed a survey evaluating the module, and focus was given to whether art can play a role in teaching observation skills. The survey included both closed-ended questions that required students to circle the most fitting response and open-ended ones that encouraged student-generated ideas. The pre-module survey was composed of four statements, each with categorical responses of "Yes", "No", or "Not sure". The pre-module survey statements were: "I regularly use art to learn concepts in medicine", "I consider myself an artistic person", "Art can play a role in the education of medical students", and "What is your expectation from this module?". The post-module survey was the same except for the addition of the six statements: "I feel skills used through art can be beneficial in my future practice as a doctor", "I feel art can play a role in improving observational and diagnostic skills in clinical practice", "I feel similar courses would be beneficial to other students as well", "I would recommend this module to others", "The artworks were well-chosen", "I feel the teaching of observational skills specifically through art analysis should be incorporated into our medical curriculum" and included open-ended questions: "What are some of the main things you learned from this module?", "What did you find most useful about the module?", and "What did you enjoy about this learning method?". A space for free text responses was also added into the survey for students participating in the study to describe their experiences, provide feedback to researchers, or leave general comments. Before and after the SSM, students also completed GRAS, CSAS, and a demographic survey. Anonymity was ensured to encourage unbiased evaluations. The survey was prepared by modifying the previous publications in the literature (1, 2).

Groningen Reflection Ability Scale (GRAS)

To enable research and measurement of self-reflection, Aukes et al. (2007) developed the GRAS, a scale that measures medical students' self-reflection ability (16). Self-reflection, sympathetic reflection, and reflective communication were found to be the three main components of personal reflection. The GRAS measures the effectiveness of an experiential learning program and reflection ability of doctors and medical students (15, 16). The GRAS consists of items that can be scored according to a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (totally agree) (16). In the present study, GRAS-TR was used. GRAS was translated, and a Turkish version was validated by Şenol et al. in 2019 (17).

Communication Skills Attitude Scale (CSAS)

For medical students, effective communication is a crucial talent. The CSAS is a validated and the most widely used assessment tool for measuring physicians' attitudes toward communication skill learning. Rees et al. (2002) created this scale (18). The CSAS was translated from English into Turkish by Harlak et al. (2008) (19). The scale consists of items within two subscales. In Subscale I, called the positive PAS scale relate to positive attitudes toward communication skills learning. Subscale II, the negative PAS scale consists of items expressing negative attitudes toward communication skills learning. All items have response options along a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (totally agree) (19).

Statistical Analysis

All statistical analysis was performed using SPSS (Statistical Package for the Social Sciences, Chicago, IL, USA) program version 22.0. For the data such as means, standard deviations, medians, minimum-maximums, and percentile values, descriptive statistics were used. For discrete data, percentages (%) and frequencies (n) were calculated. Two dependent groups' continuous data were compared using the Wilcoxon Test. The categorical data between the two dependent groups were compared using the McNemar Test and the Marginal Homogeneity Test. P <0.05 set for statistical significance.

RESULT

Demographic Survey

A total of 10 students were included in our study. Half of the students (50%) were women. The mean age of the students was 20±1 years and the median age was 20 years.

Reflection Ability

The median of the total GRAS scale score was 75 before the SSM, it increased to 79 after the art-based medical education. As the score on the GRAS score increases, we conclude that students' reflection skills improve (Table 1). The students' responses to the GRAS before and after SSM are shown in Table 2.

Table 1. Comparison of GRAS scores before and after SSM.

GRAS Score	Mean	SD	Median	Min	Max	25p	75p	p
Pre-Module	76	7	75	69	88	71	82	0,573
Post-Module	77	6	79	69	86	72	81	
Wilcoxon Test								

Table 2. Students' responses to the GRAS before and after SSM.

	Before SSM (n, %)					After SSM (n, %)				
	Strongly Disagree	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**	**Strongly Disagree**	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**
I want to know why I do what I do				50 %	50 %				40 %	60 %
I am aware of the emotions that influence my behaviour			20 %	70 %	10 %			30 %	50 %	20 %
I do not like to have my standpoints discussed	20 %	50 %	20 %	10 %			60 %	30 %	10 %	
I do not welcome remarks about my personal functioning	20 %	50 %	20 %	10 %		20 %	20 %	50 %		10 %
I take a closer look at my own habits of thinking			30 %	70 %			10 %	20 %	40 %	30 %
I am able to view my own behaviour from a distance		10 %	50 %	40 %				20 %	80 %	

	Before SSM (n, %)					After SSM (n, %)				
	Strongly Disagree	Disagree	i am undecided	Agree	Totally Agree	Strongly Disagree	Disagree	i am undecided	Agree	Totally Agree
I find it important to know what certain rules and guidelines are based on				10 %	40 %	50 %			40 %	60 %
I am able to understand people with a different cultural/religious background			10 %		40 %	50 %			50 %	50 %
I take responsibility for what I say				20 %	40 %	40 %			30 %	30 %	40 %
I reject different ways of thinking	60 %	30 %	10 %				60 %		10 %	30 %	
I can see an experience from different standpoints				30 %	60 %	10 %			20 %	60 %	20 %
I take responsibility for what I say					40 %	60 %				30 %	70 %
I am open to discussion about my opinions					60 %	40 %			10 %	40 %	50 %
I am aware of my own limitations				30 %	40 %	30 %			20 %	50 %	30 %
I sometimes find myself having difficulty in illustrating an ethical standpoint			30 %		70 %		10 %	10 %	60 %	20 %	
I want to understand myself			10 %		20 %	70 %		10 %	10 %	20 %	60 %
I am aware of the possible emotional impacts of information on others				30 %	50 %	20 %			30 %	40 %	30 %
I can empathize with someone else's situation					70 %	30 %				70 %	30 %
I am aware of the emotions that influence my thinking				30 %	50 %	20 %			10 %	60 %	30 %

Communication Skills

The rate of students who completely agreed with the statement "I must have good communication skills to be a good doctor" was 50% before the SSM, and it increased to 80% after the SSM. While the number of students who totally agree with the statement "No one will fail in medical education because of their poor communication skills" was 10% before the SSM, there were no students who thought they completely agree after the SSM. The proportion of students who answered "I totally agree" with the proposition "Learning communication skills is interesting" increased from 0% to 30% after the training. The students' responses to the CSAS before and after the SSM are shown in Table 3.

Table 3. Students' Responses to the CSAS Before and After SSM.

	Before SSM (n, %)					**After SSM (n, %)**				
	Strongly Disagree	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**	**Strongly Disagree**	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**
In order to be a good doctor I must have good communication skills	0%	0%	0%	50%	50%	0%	0%	0%	20%	80%
I can't see the point in learning communication skills	80%	20%	0%	0%	0%	80%	0%	10%	10%	0%
Nobody is going to fail their medical degree for having poor communication skills	0%	50%	40%	0%	10%	10%	50%	30%	10%	0%
Developing my communication skills is just as important as developing my knowledge of medicine	0%	10%	10%	50%	30%	0%	10%	10%	50%	30%
Learning communication skills has helped or will help me respect patients	0%	10%	0%	50%	40%	0%	0%	0%	60%	40%
I haven't got time to learn communication skills	20%	50%	30%	0%	0%	10%	50%	40%	0%	0%
Learning communication skills is interesting	0%	10%	10%	80%	0%	10%	10%	10%	40%	30%
I can't be bothered to turn up to sessions on communication skills	0%	10%	50%	40%	0%	0%	0%	30%	50%	20%
Learning communication skills has helped or will help facilitate my team-working skills	0%	0%	0%	60%	40%	0%	0%	10%	20%	70%

	Before SSM (n, %)					After SSM (n, %)				
	Strongly Disagree	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**	**Strongly Disagree**	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**
Learning communication skills has improved my ability to communicate with patients	0%	10%	20%	30%	40%	0%	0%	10%	30%	60%
Communication skills teaching states the obvious and then complicates it	10%	50%	30%	10%	0%	20%	30%	30%	10%	10%
Learning communication skills is fun	0%	10%	50%	40%	0%	0%	0%	30%	40%	30%
Learning communication skills is too easy	10%	20%	40%	20%	10%	10%	20%	20%	50%	0%
Learning communication skills has helped or will help me respect my colleagues	0%	0%	20%	60%	20%	0%	0%	10%	40%	50%
I find it difficult to trust information about communication skills given to me by non-clinical lecturers	20%	40%	20%	20%	0%	10%	30%	10%	50%	0%
Learning communication skills has helped or will help me recognise patients' rights regarding confidentiality and informed consent	0%	0%	0%	60%	40%	0%	0%	0%	60%	40%
Communication skills teaching would have a better image if it sounded more like a science subject	0%	20%	40%	40%	0%	0%	10%	40%	30%	20%
When applying for medicine, I thought it was a really good idea to learn communication skills	0%	20%	10%	60%	10%	0%	10%	20%	30%	40%
I don't need good communication skills to be a doctor	80%	20%	0%	0%	0%	60%	30%	0%	10%	0%
I find it hard to admit to having some problems with my communication skills	30%	40%	20%	10%	0%	20%	20%	60%	0%	0%

	Before SSM (n, %)					After SSM (n, %)				
	Strongly Disagree	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**	**Strongly Disagree**	**Disagree**	**i am undecided**	**Agree**	**Totally Agree**
I think it's really useful learning communication skills on the medical degree	0%	0%	0%	40%	60%	0%	0%	10%	40%	50%
My ability to pass exams will get me through medical school rather than my ability to communicate	10%	30%	10%	30%	20%	0%	10%	10%	20%	60%
Learning communication skills is applicable to learning medicine	0%	10%	0%	60%	30%	0%	0%	10%	60%	30%
I find it difficult to take communication skills learning seriously	20%	50%	30%	0%	0%	10%	70%	20%	0%	0%
Learning communication skills is important because my ability to communicate is a lifelong skill	0%	0%	0%	20%	80%	0%	0%	0%	30%	70%
Communication skills learning should be left to psychology students, not medical students	60%	40%	0%	0%	0%	60%	30%	0%	10%	0%

The CSAS has two sub-dimensions as NAS (Negative) and PAS (Positive). The median NAS score was 25 before the SSM, and 28 after the SSM. The median PAS score was 60 before the SSM, and 62 after the SSM. There was a statistically significant difference between the groups before and after the SSM, both NAS and PAS sub-dimension scores increased significantly after SSM (Table 4).

Table 4. Comparison of CSAS Before and After SSM.

	Mean	**SD**	**Median**	**Min**	**Max**	**25p**	**75p**	**P**
Pre-module CSAS Negative Attitude Sub-Dimension Score	24	4	25	18	31	19	26	0.043**
Post-module CSAS Negative Attitude Sub-Dimension Score	27	5	28	21	38	23	29	
Pre-module CSAS Positive Attitude Sub-Dimension Score	60	6	60	49	69	56	65	0.049**
Post-module CSAS Negative Attitude Sub-Dimension Score	63	8	62	49	74	57	71	
Wilcoxon Test								

Learning Medicine Through Art

Before the SSM, 8 (80%) of the students stated that they did not use art regularly to learn medical concepts, 2 (20%) stated that they were undecided, and none of the students stated that they used art regularly to learn medical concepts. After the SSM, 6 (60%) of the students stated that they would use art regularly to learn medical concepts. Before the SSM, 4 (40%) of the students stated that they saw themselves as an artistic person, while 5 (50%) stated that they were indecisive and 1 (10%) did not see he/she as an artistic person. While 8 (80%) of the students believed that art as a valuable tool for learning medicine, 2 (20%) stated that they were undecided. After the SSM, all students (100%) considered art to be a valuable resource to learn concepts in medicine and 60% of students intended to utilize art to learn medicine in the future. The students' responses to the evaluation questionnaire are shown in Table 5.

Table 5. Students' Responses to Evaluation Questionnaire.

	Before SSM			**After SSM**			
		n	**%**		**n**	**%**	**P**
I Regularly Use Art to Learn Medical Concepts	Yes	0	0%	Yes	6	60%	0,132[1]
	No	8	80%	No	1	10%	
	I'm undecided	2	20%	I'm undecided	3	30%	
I See Myself as an Artistic Person	Yes	4	40%	Yes	5	50%	0,157[1]
	No	1	10%	No	1	10%	
	I'm undecided	5	50%	I'm undecided	4	40%	
Art is a Valuable Tool for Learning Medicine	Yes	8	80%	Yes	10	100%	0,5[2]
	I'm undecided	2	20%	I'm undecided	0	0%	

[1] Marjinal Homogeneity Test [2] Mc Nemar Test

Answers for Open-Ended Questions

The students expressed their expectations from the module in their own words before the training as follows:

"…My expectation from this module is to acquire basic information about art, to think about and discuss the relationship between art and medicine, to learn about this relationship, to connect with art while studying medicine and to make studying more fun…" (Male, Age 20).

"…Medical education does not depend only on positive sciences, it also supports me in other ways such as art, broadening my horizons and helping me to become a better physician, also enabling me to have a pleasant time not only for education but also for me to develop culturally..." (Female, Age 20)

When the opinions of the students were evaluated after the SSM, 40% of the students gave the answer that they absolutely agree with the proposal "Generally, the program was excellent", while 50% of them agreed and 10% answered neither agree nor disagree. "I disagree" and "strongly disagree" answers were not given by any students to the evaluation questionnaire questions (Figure 1).

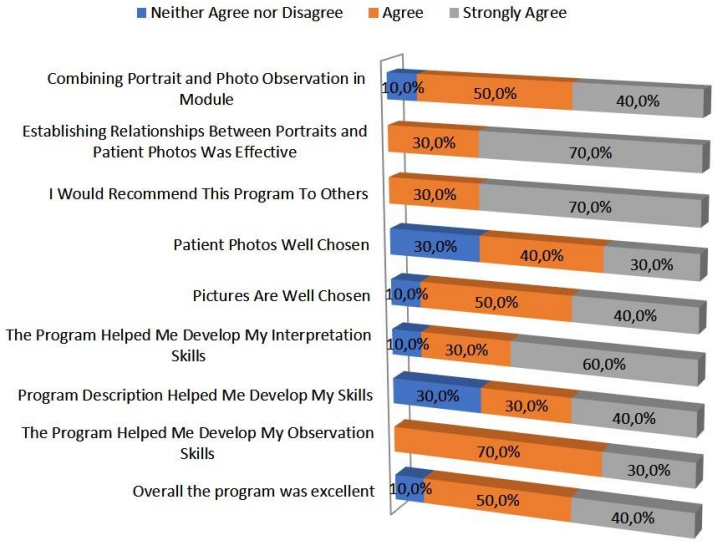

Figure 1. Post-Module Evaluation.

DISCUSSION

A crucial component of clinical diagnosis is the physical examination. A diagnostic evaluation and treatment can be more accurate using information from inspection (6, 7). The fundamental tools of a clinician are observational abilities, which can be developed via practice (20). The aim of the "Medicine and Art History" SSM, was to develop the observational skills of second-year medical students.

In order to produce physicians with sufficient diagnostic abilities, medical schools around the world have long placed a strong emphasis on training their students how to conduct appropriate patient examinations. These examination abilities heavily rely on clinical sign observation (2). In recent years, numerous studies have investigated the use of art in the development of clinical observational skills in medical education (2, 4, 6, 20-25). Naghshineh et al. (2008) reported that the observational skills of medical students who were involved in art course, can improve through art observation exercises (6). In our study, after the SSM, all participants (100%) thought that art was a useful tool for learning medical ideas and 60% of students intended to utilize art to learn medicine in the future. These findings are consistent with previous studies. Our qualitative and quantitative results suggest that art based-medical education significantly improves students' observation and communication skills and teamwork ability.

Physicians are expected to solve complex problems in a professional manner in collaboration with patients and their families. In medicine, self-reflection is defined as the discovery and evaluation of one's own and others' experiences in order to make sense and create meaning for the benefit of balanced functioning, learning, and development. The GRAS is a one-dimensional scale that focuses on personal reflection on experience and less structured problems. This scale can be used for the evaluation of the medical education program. The GRAS measures not only the impact of a course, but also the extent to which the curriculum influences the growth curve of

medical students as reflective practitioners over an extended period of time, both at the individual and group level (16). Gowda et al. (2018) reported that there was a statistically significant improvement in the GRAS scores in the museum-based course for medical students (21). Our findings are consistent with the previous study. The median of the total GRAS scale score was 75 before the SSM, it increased to 79 after the art-based medical education. As the score on the GRAS scale increases, we conclude that students' reflection skills improve.

Medical students must be able to communicate effectively. The CSAS is a validated and widely used tool to assess physicians' attitudes towards learning communication skills (18, 26). Klugman et al. (2011) conducted The Art Rounds program to teach visual observation skills to medical students at the University of Texas. They reported that statistically significant increase in students' CSAS scores. The results of this study show that students place more value on healthcare providers having communication skills and believe that these skills will help them in their future professional communication (23). Emami et al. (2019) conducted a pilot study that oncology fellows' attitudes regarding learning communication skills before and after the intervention. The mean CSAS scores increased significantly after the intervention. Oncologists' attitudes turned positive during communication skills training (27). Our findings are consistent with previous studies. The rate of students who completely agreed with the statement "I must have good communication skills to be a good doctor" was 50% before the SSM, and it increased to 80% after the SSM.

In conclusion, the results of this innovative study are encouraging. All students considered art to be a valuable tool to learn medicine. Art-based medical education contributed significantly to students' communication skills, and observation skills when the pre- and post-module surveys were compared. We believe that art-based medical education can help students to become better clinical observers and improve personal and professional development as well as be an empathetic persons. To empathize with both colleagues and patients, a doctor must be able to recognize emotions that require observational skills. Finally, reflection ability and observational skills are essential in providing professional collaboration and working in a team. Art should be integrated into medical education curriculum in many ways. This course can be applied to any work of art and can be conducted not only in classrooms but also in museums. It should be adopted by educators in medical faculties around the country.

The most important and significant limitation of our study is the number of participants. We think that the results of this study with ten students cannot be generalized to the medical curriculum, but in many medical schools in European countries and the United States, the examination of artworks with the VTS technique is included in the medical curriculum. Considering the data of our study, we started to apply the VTS technique in an elective course for first-year medical students in Mugla Sitki Kocman University Faculty of Medicine. We hope that this practice will be included in the curriculum of more medical faculties in our country. We think that it will add value to medical education both culturally and scientifically.

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Ethical Approval

The research protocol was approved by Mugla Sitki Kocman University Research Ethics Committee (Approval Number: 210048/3). We informed the participant students about the aim and the scope of the study and obtained written informed consent. The survey was anonymous,

and no personal information that allows the identification of the subjects was used.

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Conflict of Interest
The authors declare no conflict of interest.

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