RESEARCH ARTICLE

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The Effect of Education with Simulated Patient on the Empathy Attitudes of Medical Students: An Intervention Study

ABSTRACT

Objective: In this study, it was aimed to investigate the effect of simulated patient and education on the empathy levels of third-year students in medical school.

Methods: The study was carried out with 269 volunteer students. As a data collection tool, a short information form and the Jefferson Empathy Scale-Student Form were used. The scale was applied twice before and after the interview. Paired t test and Wilcoxan test were used for comparisons between the two groups.

Results: The average age of the students was 21±2.04 and 54.6% (n=147) were female. Total empathy scores of the students was found as 116.63±17.86 before the interview, and 117.35±18.48 after the interview, but this increase was not statistically significant (p>0.05). After the interview, a significant increase in the total empathy scores of female students (p<0.05) was detected. Women's total empathy scores before and after the interviews were significantly higher than male students (p<0.05). The total scores of the students who prefered the medical school due to their ideal/willingness to help people before (117.92±17.15) and after (119.10±17.68) the interview was significantly higher than the students who prefered the medical school due to other reasons (p=0.01). No significant difference was found between the empathy scores of students with and without doctors in their family (p>0.05). Ninety-four percent of the students emphasized that empathy was what they realized as the most important thing in this interview.

Conclusions: Education with the simulated patient affects empathy attitudes. After the experience of giving bad news with the simulated patient, nearly all of the students understood the importance of empathy in patient-physician communication.

Keywords: Simulated Patient, Bad News, Empathy, Medical Education.

Simüle Hasta ile Eğitimin Tıp Öğrencilerinin Empati Tutumları Üzerine Etkisi: Bir Müdahale Çalışması

ÖZET

Amaç: Bu çalışmada, simüle hasta ile eğitimin tıp fakültesi üçüncü sınıf öğrencilerinin empati düzeyleri üzerine etkisinin araştırılması amaçlandı.

Gereç ve Yöntem: Çalışma gönüllü 269 öğrenci ile gerçekleştirildi. Verilerin toplanmasında kısa bir bilgi formu ile Jefferson Empati Ölçeği-Öğrenci Formu kullanıldı. Ölçek öğrencilere görüşme öncesi ve sonrası iki kez uygulandı. İki grup arasındaki karşılaştırmalarda Paired t testi ve Wilcoxan testi kullanıldı.

Bulgular: Öğrencilerin yaş ortalaması 21±2.04, %54.6'sı (n=147) kadındı. Öğrencilerin toplam empati skorları görüşme öncesinde 116,63±17,86, sonrasında ise 117.35±18.48 bulundu ancak bu artış istatistiksel olarak anlamlı değildi (p>0.05). Görüşme sonrası kadın öğrencilerin toplam empati skorlarında anlamlı bir artış saptandı (p<0.05). Kadınların görüşme öncesi ve sonrası empati toplam empati skorları erkek öğrencilerden anlamlı şekilde yüksekti (p<0.05). Tıp fakültesini ideal/insanlara yardım etme isteği nedeniyle tercih eden öğrencilerin hem başlangıç skorları (117.92±17.15) hem de görüşme sonrası toplam skorları (119.10±17.68), diğer nedenlerle tercih yapan öğrencilerden anlamlı şekilde yüksekti (p=0.01). Ailesinde doktor bulunan ve bulunmayan öğrenciler arasında empati skorları açısından anlamlı farklılık saptanmadı (p>0.05).

Sonuç: Simüle hasta ile eğitim empati tutumlarını etkilemektedir. Simüle hasta ile eğitimden sonra öğrencilerin tamamına yakını hasta-hekim ilişkisinde empatinin önemini anlamıştır.

Anahtar Kelimeler: Simüle Hasta, Kötü Haber, Empati, Tıp Öğrencisi, Tutum, Tıp Eğitimi.

INTRODUCTION

Empathy is "one's ability to look at things through one's eyes, while putting themselves in someone else's shoes" (1). This feature, also called clinical empathy in health communication, is also defined as "the ability to understand the patient's internal experiences and perspective and communicate this understanding to the other side" (2).

Empathy is one of the most important elements of patient-physician communication and is a psychological process with cognitive and emotional dimensions, not just an attitude (3). While the emotional dimension consists of passive responses of the individual to the other person's emotions, cognitive dimention is accepted as an active, and improvable skill (1, 4).

Research shows that physicians are poorly trained in emotionally charged subjects such as empathy and compassion (5). However, there are many proven benefits of empathic approach in the patient physician relationship.

Empathy is an approach that increases a patient's trust to the doctor (6). Empathy reduces conflict, calms the patient, ensures positive communication and increases the behavior of help. Communication and empathy skills increase patient satisfaction and have a direct positive effect on health outcomes (7). Empathy has also been associated with a reduction in allegations of medical misconduct (3). All those benefits are not only helping to the patient, but also providing a positive work environment and job satisfaction for the doctor (8). Roter et al. has shown that doctors with a positive way of communicating experience less burnout (9).

Although empathy characteristics vary by personality, culture and society, it is known that it can be improved and positive attitudes can be achieved with a planned education program (10, 11).

Empathetic attitudes of medical school students are taking form due to the impacts of personal features, environmental conditions, training programs, standard/simulated patient interviews, reflexion, role play practices and role models (12). In recent years, opinions have been raised that empathy is an important feature for doctors and that communication and empathy skills are evaluated in the criteria of admission to medical school (13).

"Bad news" is all kinds of news that the patient and/or their relatives do not like, that provoke a feeling of helplessness, that destroy their hopes. Bad news is a task that physicians cannot avoid, and it is difficult for to both give and receive the bad news. Giving bad news requires training and a complex communication skills. It is known that bad news which are not given properly has devastating effects on patients/relatives (14).

Giving bad news to the patient/patient's relatives is one of the communication moments when empathy is used the most and its importance is best understood. After such an experience, it is hoped that the party that gives the bad news will be able to better understand the importance of empathy in communicating with patients. The empathy skills of doctors who give bad news have been found to be associated with better coping of the patient (15).

Simulated/standardized patient (SP) are people that trained to act as patients. Interaction with the simulated patient is one of the most effective methods in communication skills training. Simulated patients are used to both teach and evaluate communication and empathy skills (16).

Communication skills which learned under the influence of role models in the past are now an integral part of both undergraduate and postgraduate medical education. One of the stars in the World Health Organization's definition of a "five-star doctor" is the label as "communicative" (17). Communication skills are one of the main physician qualifications determined by the Canadian Council of Medical Educators Experts (CanMEDS) and the Accreditation Council for Graduate Medical Education (ACGME) (18, 19). One of the competencies that physicians should have in the National Core Education Program (UÇEP), which is the minimum education program that medical schools must comply with in our country, is "communication skills" (20).

At the Faculty of Medicine in Atatürk University, the courses about communication skills start in the first year and gradually progress from simple to complex. In the third grade, after the theoretical courses, students give bad news to a SP over five scenarios. This interview is made with the accompaniment of a structured training and evaluation form. Immediate feedback is given to the student by SP's right after the interview. In the analysis session afterwards, the interview is evaluated by both educators and students. This session also offers the student an opportunity of self-evaluation.

This study aims to investigate the impact of "breaking bad news" interaction with SP on the empathy levels of third-grade medical students.

MATERIAL AND METHODS

Ethical Consent: Ethical permissions were taken from the Atatürk University, Medical Faculty Clinical Research Ethics Committee (IRB Number: B.30.2.ATA.0.01.00-10/56, No:38 Date:16.01.2020). The study was carried out per the rules of the Helsinki Declaration.

Study Setting and Participants: The study is an intervention study which was conducted on 14-16 February 2020 in a pretest-posttest pattern. Third-grade students who interviewed for "breaking

bad news" with SH, and volunteered were included in the study. Students were informed about the study and their consent was obtained. The questionnaire was applied to the same student twice before interviewing with SP, and right after having a "breaking bad news" interview with SP. The survey took about 10 minutes to answer.

Study Size: The universe of the study was created by 335 students in the third year at Faculty of Medicine of Atatürk University. The sample calculation was not made because it was aimed to reach all the students. Full data of 269 students who participated in both surveys were evaluated. 80% of the student universe has been reached.

Data Collection Tools: A short sociodemographic information form and the Jefferson Empathy Scale-Student Form (JES-SF) were used as a data collection tool.

Sociodemographic Information Form: Students were asked four closed-ended questions about age, gender, the reason for choosing medical school and whether there were doctors in the family, and an open-ended question about what they realized was most important in this interview.

Jefferson Empathy Scale- Student Form: It is a 20-point scale which is developed by Hojat et al. in 2001 (21). There are three different versions of the scale developed for medical and health workers, medical students, non-medical health students. In our study, the student version was used. Turkish adaptation of the JES-SF was made by Gönüllü et al. (22). The scale is answered according to the sevens likert system and is rated as I disagree at all (1), fully agree (7). In the scale, there are three dimensions such as 1) Perpective taking (PT), 2) Compassionate care (CC) ve 3) Standing in patient's shoes (SPS). While the lower dimension points were calculating separately, the total score is obtained by collecting all factor points. In the adaptation study, the internal consistency of the scale was found to be 0.83, 0.70, 0.60, respectively, for factors PT, CC, and SPS. In our study, we found cronbach alpha values for s subscales 0.83, 0.92 and 0.88 respectively.

Statistical Analysis: Data analyzed by using SPSS 25.0 (SPSS Inc., Chicago, IL, U.S.) statistical package program and presented with numbers, percentages, averages, standard deviations, median, min, max values. Paired t test was used in cases where normal distribution was achieved in comparisons between dependent groups, and Wilcoxan test was used in cases where it was not. The test reliability was estimated by using Cronbach α. A p-value of <0.05 was considered statistically significant.

RESULTS

The average age of the students was 21±2 and 54.6% (n=147) of them were female. They all interviewed with SP. Sociodemographic features of students presented in Table 1.

Table 1. Sociodemographic features

Variables	Number (n)	Percent (%)
Gender		
Female	147	54.6
Male	122	45.4
The reason for prefering the medical school		
Ideal/willingness to help people	191	71
Guidance from parents and teachers	31	11.5
Economic return /dignity	47	17.5
Presence of doctors in the family		
There is	122	45
No	147	55

Students' empathy scores before and after "breaking bad news" are shown in Table 2. Total empathy scores were 116.63±17.86 in the pre-test and 117.35±18.48 in the post-test, however this increase is not statistically significant (p>0.05), no significant changes were detected in the sub-factor scores (p>0.05).

Table 2. Comparison of empathy scores before and after "breaking bad news"

	Mean ± SD	Med (min-max)	z	p
Total score – before	116.63±17.86	120 (37-140)		
Total score – after	117.35±18.48	122 (64-140)	-0.925	0.355
PT –before	55.42±7.16	57 (22-63)		
PT – after	55.49±8.35	57 (9-63)	-0.728	0.467
CC –before	39.41±10.91	43 (7-49)		
CC –after	39.59±11.43	43 (7-49)	-0.864	0.388
SPS –before	11.20±3.32	12 (2-14)		
SPS –after	11.20±3.37	12 (2-14)	0.017	0.986

PT Perpective taking, CC Compassionate care, SPS Standing in patient's shoes

Comparison of empathy scores by gender is presented in Table 3. Female students' TS increased significantly after interview (p<0.05). While there was no change in the PT factor, an increase in SP, and SPS factor scores was detected, however, it was not found statistically significant (p>0.05). After the interview, male students found a decrease in all factor scores and total scores other than SPS but it is not statistically significant (p>0.05). Women's TS after "breaking bad news" (p=0.001), PT scores before and after interview (p=0.19, p=0.16 respectively), CC scores after interview (p=0.08), SPS scores were found to be significantly higher than male students after interview (p=0.02).

Table 3. Comparison of empathy scores of male and female students

	Gender					
	Male		**Female**			
	Mean±SD	**Med (min-max)**	**Mean±SD**	**Med (min-max)**	**z**	**p**
Total-before	114.58±19.20	119 (37-140)	118.33±16.54	120(77-140)	-1.417	.156
Total -after	113.52 ±19.33	117 (64-140)	120.52±17.17	124 (68-140)	-3.317	.001
PT-before	54.25 ±7.96	56 (22-63)	56.39±6.28	57 (30-63)	-2.353	.019
PT -after	54.59 ±8.59	56 (9-63)	56.23±8.09	58 (9-63)	-2.418	.016
CC -before	38.67 ±11.15	43 (7-49)	40.01±10.7	43 (7-49)	-1.070	.285
CC -after	37.65 ±12.48	42 (7-49)	41.20±10.26	44 (7-49)	-2.654	.008
SPS -before	11.13 ±3.38	12 (2-14)	11.27±3.28	12 (2-14)	-.285	.776
SPS-after	10.71 ±3.64	12 (2-14)	11.61±3.09	13 (2-14)	-2.329	.020

PT Perpective taking, CC Compassionate care, SPS Standing in patient's shoes

After the interview, both all subgroups scores and TS of the students who chose the medical school due to the ideal/willingness for help were found to be significantly higher than the other group (p<0.05, Table 4).

Although the PT and TS of students who were doctors in their family were somewhat high, they were not statistically significant (p>0.05, Table 5).

In the open-ended question, 94% of students stated that "empathy" was the thing they noticed as the most important in the experience of bad news for SP.

Table 4. Comparison of empathy scores according to reasons of preference

	Reason for preference					
	Ideal/ willingness to help people		**Other reasons**			
	Mean±SD	**Med (min-max)**	**Mean±SD**	**Med (min-max)**	**z**	**p**
Total- before	117.92 ±17.15	121(37-140)	113.47 ± 19.23	119 (60-140)	-1.695	.090
Total-after	119.10 ±17.68	124 (68-140)	113.06 ± 19.78	116 (64-140)	-2.572	**.010**
PT- before	55.61 ± 6.85	57 (22-63)	54.95 ± 7.89	57(26-63)	-.274	.784
PT-after	56.16 ± 8.46	58 (9-63)	53.83 ± 7.87	55(24-63)	-2.896	**.004**
CC-before	40.15 ± 10.46	43 (7-49)	37.59 ± 11.83	43(7-49)	-1.626	.104
CC-after	40.29 ± 11.48	44 (7-49)	37.88 ± 11.21	41(7-49)	-2.691	**.007**
SPS-before	11.37 ± 3.21	12 (2-14)	10.81 ± 3.56	12 (2-14)	-1.035	.301
SPS-after	11.43 ± 3.28	12 (2-14)	10.63 ± 3.55	12 (2-14)	-2.075	**.038**

PT Perpective taking, CC Compassionate care, SPS Standing in patient's shoes

Table 5. Comparison of empathy scores based on whether there are doctors in the family

	Doctor in the family					
	There is not		**There is**			
	Mean±SD	**Med (min-max)**	**Mean±SD**	**Med (min-max)**	**z**	**p**
TS-before	116.33 ±17.38	119 (37-140)	116.99 ±18.49	122 (72-140)	-.811	.417
TS-after	117.91 ±17.93	123 (64-140)	116.67 ±19.18	121 (68-140)	-.274	.784
PT- before	55.08 ±7.20	56 (22-63)	55.83 ±7.11	57 (30-63)	-1.158	.247
PT- after	55.18 ±8.21	57 (9-63)	55.86 ±8.53	58 (9-63)	-1.144	.253
CC- before	39.39 ±10.06	42 (7-49)	39.42 ±11.90	44 (7-49)	-.984	.325
CC-after	40.46 ±10.89	44 (7-49)	38.55 ±12.02	43 (7-49)	-.988	.323
SPS-before	11.27 ±3.06	12 (2-14)	11.12 ±3.61	12 (2-14)	-.661	.509
SPS-after	11.05 ±3.39	12 (2-14)	11.39 ±3.36	12 (2-14)	-1.272	,203

TS total score, PT perspective taking, CC compassionate care, SPS Standing in patient's shoes

DISCUSSION

The increase in the lack of communication between physicians and patients can be resolved with trainings in this area. Studies have concluded that communication skills are basic clinical skills

that can be taught and evaluated, and that medical school students should be taught about this issue with the same rigorousness as other clinical skills (23).

Standard surveys and scales are used in the evaluation of empathy, as well as educators, patients, peers, SP's and observer assessments (13).

In our study, JES-student form was used as a measurement tool and empathy scores of the students were found to be good (116 points out of 140 points). Although there was an increase in the total scores of the students after the simulated patient interview, it was not statistically significant ($p>0.05$).

The findings on the subject in the literature are contradictory. After the trainings and patient interviews, different results were reported as the empathy scores of the students increased, decreased and did not change.

Hojat et al.'s studies with third-year students, Rees et al.'s first-year students found a decrease in after training empathy attitudes (24, 25). In the study that help and ark. has made with the third-year students, it was reported that there was a significant decrease in empathy scores of the students after interaction with the standard patient (26). Contrary to these studies, a study with first-year students of theh-tribal department reported a significant increase in post-education empathy score averages (27). In these different results, numerous factors may have influenced the educational program, the characteristics of the trainers, the time of evaluation, and the attitudes of the students towards the course.

In our study, TS of female students increased significantly after interaction with SP ($p<0.05$, Table 3), although not significant in CC and SPS factors ($p>0.05$). There was a significant change in the post-interview scores of male students ($p>0.05$). Female students have significantly higher empathy attitude scores than male students.

Few studies report that empathy scores are higher in women, some in men, while some studies suggest there is no gender difference.

Studies on the subject support our findings (28-31). In the study of Yardım et al, the total empathy scores of female students were found to be higher than that of male students (26). In the other study, made by Cangür et al., women have higher scores but it is not statistically significant (32).

According to these results, it can be concluded that women are more empathetic and more affected by education. High empathy scores in female students have been linked to gender characteristics, women's better understanding of emotion and compassion in relationships and greater success in communication (1, 2, 31).

Contrary to these results, male students' empathy scores were found to be high in a large research sample of 1,074 students from six medical schools in the study of Karaoglu et al. (33). Some studies which are fewer, have reported no difference between men and women in terms of empathy (34, 35).

Considering the decrease in the score for male students in our study, it can be considered that new studies should be carried out that investigate the cause of this decrease and that more effective educational programs should be implemented according to the results.

In our study, the scores of students who chose because of their ideal/willingness to help people were significantly higher than those who preferred for other reasons both before and after the interview. These results suggest that communication skills and empathy training are more effective in students who make their choices consciously due to the wills.

There was no change in the total scores and factor scores of the students who preferred medical school for other reasons both before and after the interview. More attention and effort needs to be put into these students. There are studies in the literature that report that students' reasons for preference affect their empathy levels. In the study of Karaoglu et al. (2012), the empathy scores of students who choose medical school for the desire to help people and with ideals were found to be significantly higher than those who stated that they preferred medical school for economic reasons (33).

In our research, it was not determined whether there is a doctor or not in the family, had a significant effect on the empathy levels of the students.

Empathy is facilitating communication in the patient physician relationship as well as in daily life. It is important to establish training programs aimed at gaining communication and empathy skills that care as much about the human aspects of medicine as it is about the scientific dimension. Educational models should be provided to improve communication and empathy skills, and attitude-enhancing trainings should be started at the earliest stage.

CONCLUSION

Although the students stated that empathy was the most important thing they realized the importance of after the experience of giving bad news, there was no significant change in empathy attitude scores. More effective programs are needed to improve the empathic attitudes of students.

Limitations: Since the study is conducted with third-year students of a single medical school, the results can not be generalized for medical school students. Because the study does not cover different classes, it could not be determined whether there was a difference between class levels. Finally, since the students are in the preclinical stage, the effect of interaction with the real patient could not be evaluated.

Informed Consent: Informed consent was obtained from all participants included in the study.

Declaration of Interest: The authors declared no conflict of interest.

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