RESEARCH ARTICLE

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Improving the Knowledge, Skill, and Attitudes of Medical Faculty Students on the Breast Cancer

ABSTRACT
Objective: In this study, it was aimed for third-year medical school students to improve their knowledge, examination skills and attitudes about breast cancer, and to experience the skills of taking a disease history, communicating effectively and giving bad news.
Methods: The present study was carried out with 406 3rd-year medical faculty students from Akdeniz University and a semi-experimental method was employed. The content of implementation consists of improving the students' skills in receiving disease history from the patient and "clinical breast examination" on breast model, as well as informing the patient about the examination findings. Before the application, all students were given theoretical information about the subject and practiced with a learning guide on clinical breast examination. The pretest-posttest results of surveys received from the participating students and the standardized patient practice feedback form were analyzed.
Results: Examining the surveys conducted before and after the implementation with 406 students, it was found that the students learned what the risk factors related with breast cancer are and they could question them while receiving the patient history ($p<0.05$). Their ability to perform breast examination was improved and they could detect the lump in breast ($p<0.05$). They gained experience about informing the patients and referring them to the departments related with preliminary diagnosis of breast cancer, as well as giving bad news ($p<0.05$).
Conclusions: With a suitable scenario and planned educations, "Standardized Patient Practice" can be successfully used in preclinical educations.
Keywords: Breast Examination, Breast Cancer, Simulation Applications, Standardized Patient, Feedback.

Tıp Fakültesi Öğrencilerinin Meme Kanserine İlişkin Bilgi, Beceri Ve Tutumlarının Geliştirilmesi

ÖZET
Amaç: Bu çalışmada tıp fakültesi dönem üç öğrencilerinin meme kanseri ile ilgili bilgi, muayene becerisi ve tutum düzeylerini geliştirmeleri ayrıca hastalık hikayesi alma, etkili iletişim kurma ve kötü haber verme becerisini deneyimlemeleri amaçlanmıştır.
Yöntem: Çalışma Akdeniz Üniversitesi Tıp Fakültesindeki 406 dönem üç öğrencisi ile yapılmış, yarı deneysel bir yöntem uygulanmıştır. Uygulamanın içeriği standart hastadan hastalık hikayesi alma ve meme maketi üzerinde "klinik meme muayene" becerisinin geliştirme ve muayene sonucunun hastaya bilgi verilmesinden oluşmaktadır. Uygulama öncesi tüm öğrencilere konu hakkında teorik bilgi verilmiş ve klinik meme muayenesi konusunda öğrenim rehberiyle uygulama yaptırılmıştır. Uygulamalara katılan öğrencilerden alınan anketlerin öntest- sontest sonuçları ve standart hasta uygulaması geribildirim formu değerlendirilmiştir.
Bulgular: Çalışmaya katılan 406 öğrenciye uygulama öncesinde ve sonrasında uygulanan anketler değerlendirildiğinde, öğrenciler meme kanseri ile ilgili risk faktörlerinin neler olduğunu öğrenmiş ve hasta hikayesi alırken bunları sorgulayabildikleri belirlendi ($p<0,05$). Meme muayenesi yapma becerisini geliştirmiş ve memede kitle varlığını saptayabilmişlerdir ($p<0,05$). Hastalara bilgilendirme ve meme kanseri ön tanısı ile ilgili branşlara yönlendirme yaparak kötü haber verme becerisi deneyimi kazandılar ($p<0,05$).
Sonuç: Uygun bir senaryo ve planlı eğitimlerle "Standart Hasta Uygulamaları" klinik öncesi dönem eğitimlerinde başarıyla kullanılabilir.
Anahtar Kelimeler: Meme Muayenesi, Meme Kanseri, Simülasyon Uygulamaları, Standart Hasta, Geribildirim.

INTRODUCTION

Nowadays, the breast cancer is the most frequently detected type of cancer among the women around the world. In our country, the increase in the number of breast cancer diagnosis and the decrease in the age of diagnosis emphasize how important the breast cancer screening is important. Whereas the worldwide incidence of breast cancer among all the cancers is 25.1% (1), it is 24.9% in our country (2).

The social awareness is necessary in order for cancer screening programs to be effective. Raising awareness by making use of sustainable education strategies and determining the examination and screening methods most suitable for our country are very important for early diagnosis of breast cancer (3). Main risk factors for breast cancer are female gender, elderliness, and white race. Breast cancer is 70-80% sporadic, 15% familial, and 5-10% genetic. Estrogen hormone plays an important role in its etiology and most of the risk factors are directly or indirectly related with the effects of estrogen. The risk of breast cancer is higher among women giving their first birth at the ages older than 30 years when compared to those giving their first birth at the ages younger than 18 years. The risk of breast cancer is higher among the women having menarch at younger ages since their exposure to estrogen is longer. Obesity, exposure to radiation at the thoracic region during developmental period, having no birth history, and no lactation history are among the factors increasing the risk of breast cancer (4).

Among the breast cancer screenings, mammography is known to be the most important scanning method decreasing the mortality (5). Besides the advanced-level examinations, the breast examination is a very important scanning and diagnosis method for early diagnosis in our country. The breast examination plays an important role in early diagnosis of breast cancer since it can be applied anytime, it requires no additional cost, and it is a guide for further examinations (6).

Breast examination is one of the important competences in medical education program. In medical education in our country, a medical faculty graduate is supposed to make a provisional diagnosis of breast disease and tumors within the scope of fundamental medical practice, to refer them to relevant specialist, and to apply suitable one among primary, secondary, and tertiary protection to the patient (7).

In medical faculties, various methods are used in teaching this skill. One of them is the simulation-based "Standardized Patient Practice". This method enable the students to have a contact with patients in a realistic clinical environment, to communicate with them, and to have a learning experience in a reliable and real-like clinical environment, which is not risky for the patients, under the supervision and guidance of lecturers/faculty members (8, 9). In this study, it is anticipated that students will acquire experience in various breast diseases through the combined utilization of standard patient applications and breast models. Through interaction with these simulation tools, students acquire clinical skills by mastering correct examination techniques and learning how to effectively communicate examination findings to patients. This practice affords students the chance to assess clinical scenarios and develop decision-making skills in the diagnostic process. It also allows for an understanding of and empathy towards patients' emotional needs. Furthermore, it provides students with the opportunity to practice and subsequently receive feedback without the risk of making errors, thereby enhancing their capacity to learn from mistakes and continuously refine their skills. The content of this educational program consists of introduction to the education method in preliminary interviews with students, informing the students, answering the questions, and having them meet with patients.

Breast cancer remains a prevalent and pressing health concern within society, warranting heightened awareness and education, particularly among medical faculty students. The present study endeavors to address this imperative by focusing on enhancing the understanding and proficiency of breast cancer and breast examination skills among 3rd-year medical faculty students. Through the implementation of a dedicated breast cancer education module, the study seeks to contribute towards empowering future healthcare professionals with the knowledge and skills necessary to effectively combat this widespread disease.

MATERIAL AND METHODS

This study consists of 3rd-year students studying at the Medical Faculty of Akdeniz University in education year 2017-2018 (n=406). All the students were contacted. The study was carried out with pretest-posttest model. The Standardized Patient (SP) application was integrated into the training program, scheduled for two days a week, four hours per day, at regular intervals throughout the program, totaling 20 days. Hybrid method was used for teaching the breast examination skill. The method covers receiving the history from patient by using SP practice and using a model for examination skills. Ethics committee approval for the study was received from Akdeniz University Faculty of Medicine Clinical Research Ethics Committee number 2017-281.

The education program consists of 4 steps (Figure 1). In the first step, without giving any education to the students, a knowledge, skill, and attitude survey on breast cancer and giving bad news was conducted. In the second step, the definition and incidence of breast cancer, risk

groups, what to do for early diagnosis, screening tests, and the importance and application of breast self-examination (BSE) and clinical breast examination (CBE) were explained to the students by using breast models. In this step, the breast examination was standardized with models by using education guidelines. The educational guidelines were exactly followed until students acquired the skill, and they were let correct their errors by performing repetitive examinations. In the third step, the students met with SP practice. It consists of interview with SP, performing CSE on models, and explaining the patients how to perform BSE. In the fourth step, the posttest was conducted. Moreover, the students were also asked to fill the feedback forms.
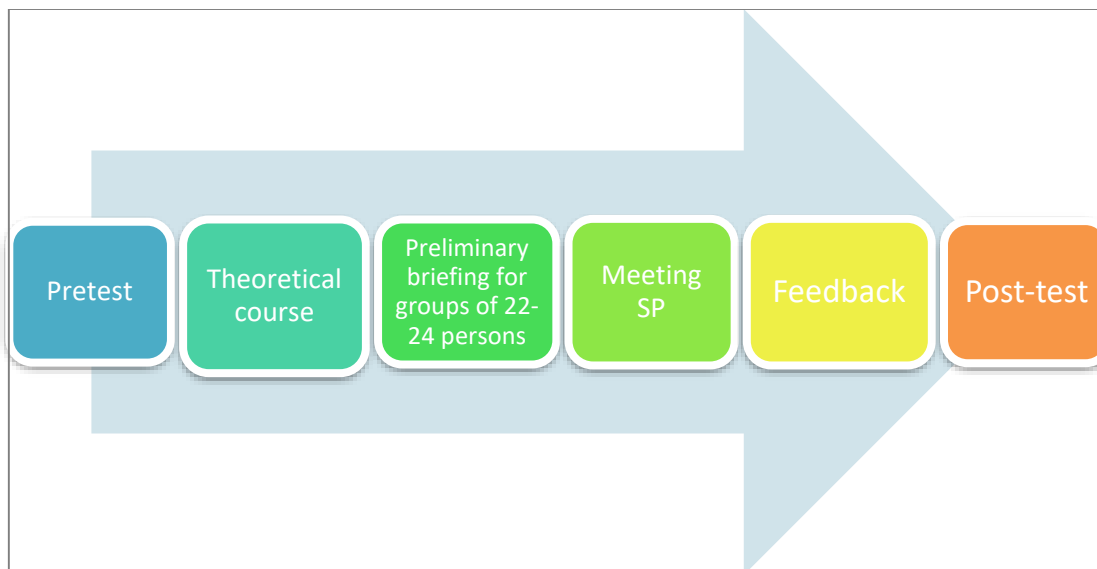

Figure 1. Flowchart of the research

The survey form used before and after the courses contains items about most frequently seen symptoms of breast cancer, risk factors, frequency of BSE, communication skills, and giving bad news.

The statistical analyses were performed using SPSS 18.0 package software. In statistical analyses, the descriptive tables were used and Chi-Square test was conducted. The level of significance was set to be $p< 0.05$.

RESULTS

The study was carried out with 406 3rd-year medical faculty students consisting of 227 (55.9) women and 179 (44.1%) men. Before the education, the students were asked if they have any knowledge about the breast cancer. Of the students, 83.7% (n=340) responded that they had knowledge on the SP practice, whereas the portion of these students increased to 96.8% (n=393) after meeting a SP (p=0.002).

Most of the answers given to the question "What are the most frequently seen symptoms of breast cancer" were the lump in breast, the pain in breast, the sunken nipple, and the leakage from nipple. While 88.6% of participating students stated that one of the most frequently seen symptoms is a lump in breast, the same rate increased to 94.8% after the education (p=0.001). When compared to the results obtained before the education, it was found that the number of students having higher level of knowledge on pain in breast, leakage from nipple, and sunken nipple that are the other most frequently seen examination findings statistically significantly increased (p<0.05) (Table 1).

Table 1. The distribution of most frequent symptoms of breast cancer as reported by the participating students before and after the education

Most frequent symptoms seen in breast cancer	Before education (n)	%	After education (n)	%	P
Pain in breast	120	29.5	95	23.3	0.00
Lump in breast	360	88.6	385	94.8	0.001
Leakage from nipple	99	24.3	120	29.5	0.00
Sunken nipple	109	26.8	112	27.5	0.00

The answers (before and after the educational program) of participating students to the questions about the effects of risk factors in breast cancer are summarized in Table 2. According to these studies, when compared to the results obtained before the educational program, the rate of knowing that not having lactated, not having given birth, using oral contraceptive, obesity, and the first

menstruation before the age of 11 years increases the risk of breast cancer and the first delivery at the age younger than 30 years decreases the risk of breast cancer statistically significantly increased after the education.

The portion of those giving right answer to the question "How frequently should BSE be performed" after the education was approx. 2 folds of the rate before education (Table 3).

Table 2. Participating students' level of knowledge on the relationship between risk factors and breast cancer, before and after the education

Questions	Before education			After education		
	R % (n)	W % (n)	R/W	R % (n)	W % (n)	R/W
Lactating in any period of live decreases the risk of breast cancer	54.43 (221)	45.56 (185)	1.19	81.77 (332)	18.22 (74)	4.48
Having no delivery history increases the risk of breast cancer	46.3 (188)	53.69 (218)	0.86	72.9 (296)	27.09 (110)	2.69
Use of oral contraceptive increases the risk of breast cancer	54.18 (220)	45.81 (186)	1.18	83.49 (339)	16.5 (67)	5.06
The familial history of breast cancer increases the risk of breast cancer	97.04 (394)	2.95 (12)	32.89	99.26 (403)	0.73 (3)	135.9
The incidence of breast cancer increases at later ages	88.66 (360)	11.33 (46)	7.82	96.3 (391)	3.69 (15)	26.09
Obesity increases the risk of breast cancer	45.81 (186)	54.18 (220)	0.84	85.22 (346)	14.77 (60)	5.76
The menarch at the age younger than 11 years increases the risk of breast cancer	46.05 (187)	53.94 (219)	0.85	86.2 (350)	13.79 (56)	6.25
First delivery at the age younger than 30 years decreases the risk of breast cancer	40.39 (164)	59.6 (242)	0.67	69.7 (283)	30.29 (123)	2.3
Breast cancer history of person's own increases the risk of breast cancer	90.88 (369)	9.11 (37)	9.97	97.78 (397)	2.21 (9)	44.24

R: Right. W: Wrong. R/W: Right/Wrong

The feedbacks obtained from the students right after the education were positive. After the SP practice, 91.4% of students were satisfied with SP and history, 93.3% were satisfied with the contribution of interview to the learning, and 92.8% were satisfied with the contribution of feedback to the learning. Moreover, 87.6% of students were satisfied with their performance. The overall rate of satisfaction was 99%.

Table 3. Distribution of participating students' answers to "how frequently should the BSE be performed" before and after the education

How frequently should the BSE be performed	Before education (n)	%	After education (n)	%	p
Whenever remembered	44	11	14	3.52	0.01
Once every bath	82	20.6	7	1.7	
Once a week	39	9.82	6	1.5	
Once a month	184	46.3	362	91.1	
Once every three months	48	12	8	2	
Total	397		397		

DISCUSSION

The present study is an interventional study and it was observed that, when compared to the pre-education period, the present study improved the students in terms of knowledge of breast examination, knowledge of most frequent symptoms seen in breast cancer, and BSE skills. Most of the studies in literature are cross-sectional ones. No interventional study carried out with medical students could be found. In the present study, the use of model, SP practice, and theoretical courses positively contributed to the improvement in skills, knowledge, and attitudes of students.

Among the answers of students regarding the most frequently seen symptoms in breast cancer, the lump in breast was ranked first. The same rate among the students in High School of Nursing was found to be 54.6% (10). It might be because there is no relevant subject in curricula of medical students.

When compared to the period before the educational program, the students' knowledge about the factors increasing and decreasing the risk of breast cancer significantly increased after the education.

In literature, there are studies reporting similar results. According to the study carried out by Aslan et al., 85% of students in high school of nursing know that lactation decreases the incidence of breast cancer (10). In the study of Seidel et al., it was reported that the level of students' knowledge increased after the education (11). In Karayurt et al.'s study, it was determined that 76.2% of women do not know how the use of OKS affects the breast cancer (12). The present study is seen to have significantly contributed to the students' knowledge of risk factors of breast cancer such as having no birth-giving history, obesity, first menstruation before the age of 11, and familial breast cancer history. Since they play an important role in the delivery of protective medical services to the society, it might be considered as a good educational practice for the physicians to well know these risk factors and use them in their professional lives. Moustafa et al. emphasized that education is a positive predictor for improving the knowledge, skill, and attitudes of students (13).

Breast cancer is the most common type of cancer among women and has the highest mortality rate (14, 15). For this reason, the early diagnosis is very important in breast cancer. BSE and CSE play an important role in early diagnosis of breast cancer among women aged <40 years. However, in the previous studies, it was reported that the women and the students studying in medical sciences and non-medical departments do now sufficiently know BSE and CSE (16). In the present study, although only half of the students correctly answered the question "how frequently should BSE be applied" before the education, this rate increased to 91.1% after the education. In the study of Karayurt et al., it was reported that only 6.7% of university students were regularly performing BSE on monthly basis (12). The rate of women stating that they perform BSE on regular basis was reported to be 28.9% by Göçgeldi et al., 32.7% by İtilli, and 42.3% by Yıldırım et al. (17-19). The education on breast examination positively changes the attitudes of students. In a study carried out in a high school of nursing located in İstanbul, it was determined that

the group that had education performed BSE and CSE more than the group having no education (16). Similar results were also reported by Uzun et al. Based on these results, it can be stated that educations related with BSE change the behaviors and attitudes (20). In the study of Maurer, it was reported that the health promoting education given to young women increased their knowledge of BSE and improved their BSE skills (21).

In summary, the fact that there is a significant lack of knowledge about breast cancer among third-year medical students suggests that this lack of knowledge will be at a higher level in the general population. Therefore, these results show that it is necessary to develop and implement educational programs for breast cancer. There are various studies using different methods such as individual study, group study, and peer education. The common result of all studies is that education provides changes in knowledge and behavior (22-24).

CONCLUSION

After participating in this educational intervention, medical students exhibited enhanced knowledge of breast cancer risk factors and improved proficiency in breast examination. The training program also promoted the development of basic communication skills, enabling students to effectively communicate with patients about their condition and guide them towards appropriate diagnostic pathways. The statistically significant improvements observed underscore the effectiveness of Standardized Patient Practice in preclinical educational settings. Moving forward, concerted efforts should be made to disseminate and implement such educational programs, aiming to bolster breast cancer awareness and enhance outcomes across diverse populations.

A limitation of the study may be its regional focus due to being conducted solely within a medical school. Enhancing the overall validity of the results could be achieved by conducting multicenter studies and implementing the model in the education of medical students across diverse geographical regions.

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