

## The Effect of Simulation-Assisted Breast Cancer Education on Health Beliefs and Breast Self-Examination Practices in Young Adults

Simülasyon Destekli Meme Kanseri Eğitiminin Genç Yetişkinlerde Sağlık İnançları ve Kendi Kendine Meme Muayenesi Uygulamaları Üzerindeki Etkisi

Ülkü Saygılı DÜZOVA<sup>1</sup>, Zuhale ŞEFLEK<sup>2</sup>, Perihan Nur UZUN<sup>3</sup>, Müge AKER<sup>4</sup>, Ayşe Beyza İNAN<sup>5</sup>, Hasan ESKENE<sup>6</sup>

### ABSTRACT

The most frequent cancer in women is breast cancer, which is a major global public health concern. Increasing cancer awareness and breast self-examination are important steps for early diagnosis. The aim of this study is to increase knowledge and practice attitudes regarding breast examination through simulation and peer support. The research had a pre-test-post-test design and was conducted with 138 university students. "Personal Information Form" and "Champion Health Belief Model Scale in Breast Cancer Screening" were used as data collection tools. Data were analyzed with SPSS 22.0 Windows package program. Shapiro-Wilk test to determine the normal distribution of variables, "Kruskal Wallis H Test" was used. After the intervention, a significant increase was observed in the sub-dimensions of the health belief model scale, including sensitivity, severity, benefit and health motivation, as well as the perceived benefits of breast self-examination and self-efficacy levels ( $p < 0.05$ ). Benefit and health motivation levels vary depending on sociodemographic factors such as income level, place of residence, and family history of cancer ( $p < 0.05$ ). Educational program supported by simulation and peer education can increase students' knowledge about breast cancer and breast self-examination and increase the frequency of practice.

**Keywords:** Breast Cancer, Breast Self-Examination, Education, Simulation, Young Adults

### ÖZ

Kadınlarda en sık görülen kanser, küresel halk sağlığı açısından önemli bir sorun olan meme kanseridir. Kanser farkındalığını artırılması ve kendi kendine meme muayenesinin erken teşhis için önemli adımlardır. Bu çalışmanın amacı simülasyon ve akran desteği yoluyla meme muayenesine ilişkin bilgi ve uygulama tutumlarının artırılmasıdır. Araştırma ön-test-son-test deseninde olup 138 üniversite öğrencisi ile yürütülmüştür. Veri toplama aracı olarak "Kişisel Bilgi Formu" ve "Meme Kanseri Taramasında Şampiyon Sağlık İnanç Modeli Ölçeği" kullanılmıştır. Veriler SPSS 22.0 Windows paket programıyla analiz edildi. Değişkenlerin normal dağılımını belirlemek için Shapiro-Wilk testi, üç veya daha fazla grup arasındaki farklar için "Kruskal Wallis H Testi" kullanıldı. Müdahale sonrasında sağlık inanç modeli ölçeğinin duyarlılık, şiddet, fayda ve sağlık motivasyonunu içeren alt boyutları ile kendi kendine meme muayenesi ve öz yeterlilik düzeylerine ilişkin algılanan faydalarda anlamlı bir artış gözlenmiştir ( $p < 0,05$ ). Öğrencilerin, yararlanma ve sağlık motivasyon düzeyleri ile gelir düzeyi, yaşadıkları yer, ailede kanser öyküsü gibi sosyodemografik faktörlere bağlı olarak değişmektedir ( $p < 0,05$ ). Simülasyon ve akran eğitimiyle desteklenen bir eğitim programının öğrencilerin meme kanseri ve kendi kendine meme muayenesi konusundaki bilgilerini ve uygulama sıklığını artırabileceğini göstermektedir.

**Anahtar Kelimeler:** Genç Yetişkin, Meme kanseri, Kendi Kendine Meme Muayenesi, Eğitim, Simülasyon

Before the study was carried out, institutional consent and ethics committee approval were acquired from Selçuk University Faculty of Medicine (Date: 07.06.2022, Approval No: 2022/271).

<sup>1</sup> Asst. Prof. Dr. Ülkü Saygılı DÜZOVA, Nursing, Selçuk University, Internal Medicine Nursing, ulkusaygili@selcuk.edu.tr, ORCID: 0000-0001-8402-0022

<sup>2</sup> Lecturer, Zuhale ŞEFLEK, Nursing, Selçuk University, Health Services Vocational School, zuhale.seflek@gmail.com, ORCID: 0000-0002-1385-5310

<sup>3</sup> Student, Perihan Nur UZUN, Health Care, Selçuk University, Vocational School of Health Services, perihannuruzun@cloud.com, ORCID: 0000-0001-8224-6765

<sup>4</sup> Student, Müge AKER, Health Care, Selçuk University, Vocational School of Health Services, mugeaker7@gmail.com, ORCID: 0009-0001-5039-6061

<sup>5</sup> Student, Ayşe Beyza İNAN, Health Care, Selçuk University, Vocational School of Health Services, bbeyzai2101@gmail.com, ORCID: 0000-0001-7145-3291

<sup>6</sup> Hasan ESKENE, Health Care, Selçuk University, Vocational School of Health Services, hasanek9120@gmail.com, ORCID: 0000-0002-5685-3366

İletişim / Corresponding Author:  
e-posta/e-mail:

Ülkü Saygılı DÜZOVA  
ulkusaygili@selcuk.edu.tr

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## INTRODUCTION

The most frequent disease in women is breast cancer, which is a significant public health issue both globally and in Turkey. Globally, there were 685,000 breast cancer-related deaths and 3 million new cases of the disease in 2020.<sup>1,2</sup> Despite being widespread, breast cancer has a fairly good prognosis when detected early in the disease.<sup>2</sup> Early detection not only improves a woman's chances of recovery, but also positively affects her chances of survival. So much so that in the early stages, our country's five-year survival rate reaches 90%.<sup>3</sup> We advise three approaches for the early detection of breast cancer. These include mammography, breast self-examination (BSE), and a physician's clinical breast examination.<sup>4</sup> BSE is an awareness method for determining appropriate diagnosis and treatment, and when used in conjunction with other diagnostic methods, it is a highly effective tool.<sup>5</sup> BSE has many advantages in that it does not require any cost, is not an invasive procedure, does not involve interference, is simple to apply, does not take time, and protects privacy. The American Cancer Society advises women over 20 to undergo regular BSE once a month. However, numerous investigations carried out both domestically and internationally found that few women performed BSE and that women's knowledge of BSE was insufficient.<sup>4, 6, 7</sup> The literature cites various reasons, including a lack of knowledge on how to apply BSE and a lack of time. Among the potential barriers to carrying out this exercise are the fear of not knowing how to do it correctly or the difficulty of finding any mass.<sup>2</sup>

According to studies, the most significant factor influencing BSE and breast cancer screening is one's health attitudes. The health belief model states that for someone to carry out the anticipated activity, they need to experience or employ tactics that boost their motivation.<sup>8</sup> Effective education programs that will raise the target population's health views and encourage healthy behavior are necessary if nurses are to successfully conduct the programs for the early detection of BSE.

Nurses and other health professionals have important roles and responsibilities in the process of gaining BSE habits and protecting women from breast cancer.<sup>9</sup>

Simulation-based education is a widely used technique in nursing education that improves physical examination skills proficiency and competence. Studies emphasize that an education completed with a practical component is much more effective than the classical method.<sup>10-13</sup> Using silicone breast models during BSE training dramatically increases students' actual positive rate.<sup>5, 14</sup> In this regard, it is crucial to introduce new approaches and simulations to the students of the child development department, a predominantly female professional group that interacts with children. It is among the responsibilities of nurses to raise awareness of this student group, encourage them to recognize breast tissue, and provide information about breast cancer and BSE. The literature review included a study on BSE, but it did not include any studies on the simulator or the child development department. We are preparing this study with the aim of determining the BSE knowledge and practice levels of students, providing the necessary training, and enhancing these levels.

Research hypotheses: H1: There is a difference between the control and experimental groups in terms of the average health belief scores in the education given to university students on early diagnosis of breast cancer. H2: There is a difference between the control and experimental groups in terms of the average health belief scores according to sociodemographic variables. H3: There is a difference between the control and experimental groups in terms of the status of self-breast examination in the education given to university students on early diagnosis of breast cancer. H4: There is a difference between the control and experimental groups in terms of the frequency of self-breast examination in the education given to university students on early diagnosis of breast cancer.

## MATERIAL AND METHOD

### Study Design

This study was conducted using a pretest/posttest research design to evaluate the effect of the education given to university students on increasing BSE awareness. We prepared and reported the study using the Strengthening the Epidemiology of Observational Studies (STROBE) checklist for descriptive reporting.

### Study Sample and Participants

Between June and July of 2022, the research was carried out at a health services vocational school. 212 students enrolled in the child care and youth services department (2-year education) during the spring semester of 2022 made up the research population. We identified the research's sample population by performing sample calculations within the established group. We applied the sample selection formula to the known group and determined the right number of students for the study to be  $n = 138$ . We organized the students into groups based on the courses they took to gather information from each class. The study included 67 female first-year students and 71 female second-year students after stratification.

It was calculated at 95% confidence level using the "GPower-3.1.9.4" program. Considering the average score of Acun and Ordu (2023) Champion's Health Belief Model Scale in Breast Cancer Screening [15], the sample group was determined as 110 with an effect size of 0.3164557, 95% power, and 5% margin of error. Considering that students may not be able to attend two sessions or may have an additional condition, the sample was increased by approximately 25% and 138 people were included in the sample. The selection of individuals in the sample was made by random sampling method.

The research's inclusion criteria include enrollment in the health services vocational school at the relevant university and voluntary participation in the study. The student's refusal to participate in the research or the

deletion of their registration serve as the exclusion criteria.

### Data Collection Tools

The research utilized a personal information form and a health beliefs scale regarding breast cancer. It took an average of 15 minutes to fill out the scale and questions.

### Personal Information Form

The researchers created the form based on the literature to determine the sociodemographic characteristics of each individual in the initial evaluation. This form contains 11 questions.<sup>2, 9, 16</sup>

### Health Beliefs Scale for Breast Cancer and Breast Self-Exam (CHBM)

The Health Belief Scale in Breast Cancer Screenings, which was adapted by Champion for breast cancer screening and validated and reliable in our country by Gozum and Aydın was used. Scale; It includes six sub-dimensions: sensitivity, caring, health motivation, benefits, barriers, and self-efficacy. Six concepts related to beliefs and behaviors defined in CHBM; (1) perception of susceptibility: perception of a danger to health (2), perception of seriousness: perception of the anxieties of the threatening situation and the harmful consequences of the situation (3), perception of benefit: perceived positive aspects in the formation of protective behavior (4), perception of obstacles; perceived negative aspects of protective behavior (5), health motivation: the general state of intention and willingness to develop behaviors in maintaining and promoting health. and (6) trust; refers to an individual's ability to carry out a health behavior. Each dimension on the scale has a score that is determined; there is no grand total score. The more the scores, the more sensitive and compassionate the person is; in other words, advantages are regarded highly for the benefit perception and difficulties are regarded highly for the obstacle perception.

According to Cronbach  $\alpha$  values, the reliability of the scale in Gozum and Aydın's

study ranged from 0.69 to 0.83.<sup>17,18,19</sup> In this study, the Cronbach Alpha coefficients of the scale sub-dimensions of sensitivity, perceived seriousness, perceived benefit, perceived barriers, trust and health motivation are respectively; 0.68, 0.61, 0.66, 0.71, 0.98 and 0.82.

### **Data Collection**

The data were collected face to face by the researchers in the classrooms of the unit where the research was conducted at the university. The process of filling out the surveys took an average of 15 minutes.

### **Pre-Intervention**

In this study, regarding breast self-examination, the researchers tested the feasibility of the intervention with 10 students, whose informed consent was obtained, in order to determine the feasibility of the simulation and evaluate the readability of the questionnaires. Information about these students is not included in the study and data analysis. In the study, instructor students involved in the BSE training process received training until they completed their preparations prior to the study. Practice was carried out with breast simulation.

### **Intervention- Educational Program**

The training program was developed under the guidance of literature and the recommendations of experts within and outside the research. After written consent was obtained between June 28 and 29, pretests were administered to students who personally gave permission for the study. After the pretests, the students were divided into six groups. The school provided each group with three phases of training in its classrooms. In the first stage, the nurse researcher who participated in the study gave a 45-minute training on breast cancer and the early diagnosis of breast cancer. Three days later, the students in the study completed the second training, which included peer education and a theoretical explanation of breast self-examination. The school's intervention laboratory carried out the intervention using breast simulation models in the third stage. Each group received training on identical

topics from the same peer trainer. A slide show and educational brochures covering breast self-examination were used as educational materials for students.<sup>20-21</sup>

### **Breast Self-Examination Information Leaflet**

The form distributed to students in the second stage of the training was prepared using the literature and expert opinions in order to support the permanence of the training and the BSE process. Information about the definition of cancer, risk factors, the value of early diagnosis, and the correct technique of breast self-examination is included in the breast cancer and breast self-examination training curriculum. The brochure, in which BSE is explained with visuals, includes the National Breast Cancer Screening Standards, BSE time, areas to be examined manually, what the examination technique should be like, and examination methods in front of a mirror.

### **Breast Examination Simulator**

In the third stage of the training, students were given simulation-based practical training. In order to put toric knowledge into practice, a breast examination simulator was provided to the students in the school's own skills laboratory. The simulator was produced for both educational and practical purposes, and thanks to its special vinyl formula, it provides physical appearance and real body feeling during the examination. The trainers placed masses of different diameters under the simulated breast and the students were given the opportunity to test whether they could feel the nodules in the lower breast and nipple. The students developed their skills in detecting different sized nodules during the examination by using the simulator. This application helped the participants to experience realistic scenarios that they may encounter during BSE (Figure 1).



**Figure 1. Breast Examination Simulator**

### **Ethical Aspect of the Study**

Before the study was carried out, institutional consent and ethics committee approval were acquired from XXX University Faculty of Medicine (Date: 07.06.2022, Approval No: 2022/271). This study was conducted in accordance with the Declaration of Helsinki. The students were informed about the purpose of the research and their consent was obtained to participate in the research.

### **Data Analysis**

The IBM SPSS Statistics 22 package was used for the analyses. When analyzing the study data, descriptive statistics (mean, standard deviation, median, minimum, and maximum) were provided for numerical variables and frequencies (number, percentage) were supplied for categorical variables. The Shapiro-Wilk test was used to determine if the variables fit the normal distribution; those that did not were assigned their median, minimum, and maximum values. The "Kruskal Wallis H Test" was

utilized to examine differences between three or more groups, the "Wilcoxon Sign Test" was employed to examine differences between two dependent groups, and the "Mann Whitney U Test" was utilized to examine differences between two independent groups. Statistical significance in the analysis was interpreted at the  $p < 0.05$  level. Reliability analysis of the scales was done using Cronbach's alpha reliability coefficient.

### **Limitations**

The students' knowledge levels in this study about breast cancer and breast self-examination were based more on their own statements than their medical records. The use of subjective reports may represent a methodological limitation, as personal narratives often provide unbiased indicators. Additionally, the small sample size is another important limitation of this study. The small sample size limits the generalizability of the findings and makes it difficult to repeat the results in a larger population. For these reasons, it is important to study larger and more diverse samples in future research in terms of the validity and reliability of the findings.

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## **RESULTS AND DISCUSSION**

Nurses play a critical role in promoting early diagnosis and screening programs across various segments of society and among members of different professions. Their contributions are particularly vital in the context of public health, where early detection of diseases can lead to more effective treatments and better patient outcomes. Nurses' educational activities on breast cancer, which is one of the most preventable cancers due to early diagnosis practices, are especially impactful. These activities not only improve breast cancer survivors' survival rates by facilitating early intervention, but they also

significantly increase awareness about the importance of regular screenings and self-examinations. Sensitivity, perceived seriousness, perceived benefits and health motivation, perceived benefits of BSE, perceived barriers to BSE, and self-efficacy levels of the participants before and after the training show significant differences ( $p < 0.05$ ). These differences are observed within the scope of the study. The participants' post-training sensitivity, perceived seriousness, perceived benefits and health motivation, perceived benefits of BSE, and self-efficacy levels are higher compared to

pre-training levels; however, the perceived barriers to BSE are lower (Table 1).

Before the training, 37% of the participants reported doing breast self-examination (BSE). This rate increased significantly to 88% in the first month after training; This demonstrates the immediate impact of the educational intervention. Additionally, before the training, only 6% of the participants reported performing BSE once a month. This figure increased dramatically to 45% in the first month after training, demonstrating a significant improvement in the practice of regular self-examination among participants (Table 2). These findings highlight the effectiveness of the educational program in raising breast cancer awareness and encouraging proactive health behaviors. The increase in BSE practice rates shows that the importance of regular self-examination in the early diagnosis of breast cancer is successfully conveyed in the training sessions. Data from this study further demonstrate the critical role targeted education and training plays in increasing health literacy and enabling individuals to take responsibility for their own health.

**Table 1. Examination of Students' Health Beliefs Model Scale Sub-Dimensions Pre/Post-Intervention**

	n	Medyan(Min-Maks)	Z	p
<b>Sensitivity</b>				
Pre-test	138	9(5-12)		
Post-test	138	12(6-15)	-6.692	<0.001
<b>Caring/Seriousness</b>				
Pre-test	138	16(6-24)		
Post-test	138	22(12-30)	-8.076	<0.001
<b>Benefit and Health Motivation</b>				
Pre-test	138	17.5(5-21)		
Post-test	138	20(5-23)	-6.881	<0.001
<b>BSE Benefit Perception</b>				
Pre-test	138	8(4-16)		
Post-test	138	15.5(10-20)	-9.999	<0.001
<b>BSE Obstacle Perception</b>				
Pre-test	138	20(13-32)		
Post-test	138	11(8-40)	-2.872	0.004
<b>BSE Self Effectiveness</b>				
Pre-test	138	28.5(18-40)		
Post-test	138	36(21-48)	-8.163	<0.001

*p*<0.05. Wilcoxon İşaret Testi

Other studies show that the monthly regular intervention rates of BSE range from 5% to 40%.<sup>1,6,8</sup> There are many national and international studies reporting that the number of individuals who have knowledge about

BSE and breast cancer is very low. Students performing BSE lacked information on how and when to do it.<sup>20,21</sup> The rate of BSE Intervention determined in this study is similar to other studies in the literature a study conducted by Kumarasamy et al. (2017) showed that only 26% of women are aware of BSE and 5% practice it regularly.<sup>20</sup> BSE awareness was found to be significantly correlated with age and education level.<sup>21,22</sup>

**Table 2. Examination of Students' Self-Breast Examination Situations Pre/Post-Intervention**

BSE	Pre-Training		Post-Training	
	n	%	n	%
<b>Intervention Status</b>				
Yes	51	37	123	88
No	87	63	15	12
<b>Intervention Frequency</b>				
Now and again	48	94	68	55
Monthly	3	6	55	45

Compared to those without a chronic illness, individuals with chronic illnesses showed higher levels of sensitivity. Depending on the class, participants' degrees of concern and seriousness about the research vary. Participants enduring a chronic illness and self-examining their breasts showed significant differences (*p*<0.05). Within the research scope, the participants' benefit and health motivation levels differ depending on their place of residence. The study also considers income status and the existence of a family history of cancer (*p*<0.05). Participants who live with their families have higher levels of benefit and health motivation than those who live in student housing or dormitories. The participants' BSE barrier perception levels within the research scope differ according to their income status, the presence of a chronic disease, and a family history of cancer (*p*<0.05). The participants' BSE self-efficacy levels within the scope of the research differ depending on their age, class, having a chronic disease, having a family history of cancer, and performing breast self-examination (*p*<0.05) (Table 3). According to CHBM, women who are sensitive to breast cancer, perceive breast cancer as a serious condition, have a low perception of disability, and a high perception of benefit will perform

BSE more frequently. When the mean scores of the CHBM scales of the students included in the study were examined before and after the education, the difference between the sub-dimension mean scores of sensitivity, benefit, disability, health motivation, and trust was found to be statistically significant. Additionally, the mean CHBM scores of the participants with a family history of cancer and those with chronic diseases were found to be higher and more significant compared to others<sup>22</sup>. Sensitivity perception is both a subscale of the health belief model and is related to an individual's ability to perceive a possible risk related to health or illness. Parallel to the results of our study, other studies also found that women who performed BSE had higher perceptions of sensitivity.<sup>23-24,25</sup> The increase in sensitivity perception after the training can be explained by the heightened awareness about the perceived danger of developing breast cancer, which directs the individual towards healthy behaviors.

It is known that receiving training on breast cancer and BSE has a positive effect on BSE practice. In our study, unlike other studies, simulation and peer education were used. It is very important that breast cancer and BSE are included in the curriculum of students studying at the university and that in-service training programs are planned with the academicians in the nursing departments. Many studies have supported the idea that the use of simulation outside the traditional model and the participation of educated students in such training increase student satisfaction. The adoption of hybrid simulation in the education curriculum will increase the effectiveness of education.<sup>12-13</sup> In the literature, there are studies arguing that breast self-examinations (BSE) are not effective in detecting breast cancer and may not reduce the incidence of late-stage presentations. In developing countries, women face barriers to accessing healthcare and are less likely to attend regular clinical breast examinations. Thus, BSE can still play a crucial role in encouraging women with palpable lumps to seek clinical breast examinations. A study conducted in Pakistan found that

approximately 16% of women who visited breast clinics were diagnosed with malignancies. Another study reported that 24% of women who came to the breast clinic after performing BSE had malignancies. Teaching these women from the community, whether they have mastalgia, mastitis, or breast lumps, allows them to screen themselves for breast masses and to educate other women in their family and social circles. This approach can enable them to learn and perform breast examinations effectively.<sup>7</sup>

This study shows that simulation and peer education aimed at increasing breast self-examination (BSE) and breast cancer awareness in university students are effective. It has been determined that such education positively affects students' perceived sensitivity, severity, benefit, health motivation and self-efficacy levels within the framework of the health belief model. In line with these results, the critical role of the nursing profession in such education should be emphasized even more. Nurses occupy an important position in terms of guidance and knowledge transfer in the health education process. Nurses not only provide theoretical knowledge but also help individuals learn the correct techniques and integrate this information into their own lives with practical training. In this context, nurses are a key factor in increasing individuals' sensitivity to breast cancer by assuming the role of educators emphasizing the importance of BSE. The role of nurses in developing health beliefs is also critical in terms of guiding and motivating individuals in shaping their health behaviors. By explaining the benefits of breast examination to individuals, nurses can increase their perceived sensitivity to breast cancer risk and create a significant impact on health protection by emphasizing the life-saving importance of early diagnosis. In addition, reliable education provided by nurses improves individuals' self-efficacy in breast self-examination and encourages them to make this behavior regular. The active role of nurses in health education programs greatly contributes to the strengthening of individuals' health beliefs and thus to the improvement of the level of social health.

**Table 3. Post-Intervention Health Belief Model Scale of Students by Sociodemographic Variables**

	n	%	Sensitivity	Caring/ Seriousness	Benefit and Health Motivation	BSE Benefit perception	BSE Obstacle Perception	BSE Self Effectiveness
<b>Average age</b>					21.32±0.61			
<b>Average Age at Menarche</b>					12.45±1.52			
<b>Class</b>								
1st Class	67	48.6	12(8-14)	22(12-27)	20(5-23)	16(10-20)	10(8-40)	37(21-45)
2nd Class	71	51.4	11(6-15)	21(12-30)	20(16-22)	14(11-20)	12(8-38)	35(24-48)
Z			-.682	-3.058	-.822	-2.727	-.551	-2.780
p value			.495	.002	.411	.006	.582	.005
<b>Income status</b>								
Income less than expenses	36	26.1	12(9-15)	22(12-27)	19(16-22)	15.5(12-18)	20(8-40)	35.5(27-44)
Income equal to expense	76	55.1	11(6-14)	21(12-30)	19.5(5-23)	15(10-20)	9.5(8-40)	35(24-48)
Income more than expenses	26	18.8	12(8-14)	22(12-27)	21(19-22)	16(13-19)	8(8-40)	37(21-45)
Chi-Square			1.640	.249	21.756	1.729	13.867	1.112
p value			.440	.883	<0.001	.421	.001	.574
					1.2>3		1>2.3	
<b>Having a Chronic Disease</b>								
Yes	21	15.2	13(9-15)	23(18-30)	19(16-22)	16(14-20)	16(8-40)	39(33-48)
No	117	84.8	11(6-14)	21(12-27)	20(5-23)	15(10-20)	11(8-40)	35(21-44)
Z			-2.948	-3.153	-.813	-2.193	-2.125	-3.252
p value			.003	.002	.416	.028	.034	.001
<b>Having a Family History of Cancer</b>								
Yes	46	33.3	13(9-15)	23(15-30)	20(16-23)	17(12-20)	12(8-40)	38.5(29-48)
No	92	66.7	10(6-14)	21(12-27)	19.5(5-22)	14.5(10-20)	10.5(8-32)	35(21-44)
Z			-5.211	-1.521	-2.273	-3.725	-1.986	-3.192
p value			.000	.128	.023	.000	.047	.001
<b>Cancer Type Family History of Cancer</b>								
No Cancer	92	66.7	10(6-14)	21(12-27)	19.5(5-22)	14.5(10-20)	10.5(8-32)	35(21-44)
Lung Ca	23	16.7	12(9-13)	23(15-30)	20(18-22)	17(15-20)	11(8-40)	38(29-48)
Breast Ca	15	10.9	13(12-14)	21(17-23)	21(16-23)	16(12-20)	11(8-40)	38(32-41)
Endometrial Ca	2	1.4	14(14-14)	27(27-27)	19(19-19)	18(18-18)	40(40-40)	45(45-45)
Head Neck Ca	2	1.4	15(15-15)	24(24-24)	21(21-21)	14(14-14)	16(16-16)	44(44-44)
Leukemia	4	2.9	13(13-13)	22.5(22-23)	19.5(18-21)	15.5(14-17)	21.5(11-32)	39(39-39)
Chi-Square			36.560	12.783	7.602	25.457	9.968	18.905
p value			<0.001	.051	.180	<0.001	.076	.051
						2>1		
<b>Situation of Performing BSE</b>								
Yes	51	37	12(6-14)	21(12-27)	20(16-23)	15(10-20)	11(8-40)	34(24-45)
No	87	63	11(8-15)	22(12-30)	20(5-22)	16(11-20)	11(8-40)	37(21-48)
Z			-2.458	-3.075	-.099	-.257	-.468	-2.095
p value			.014	.002	.921	.797	.640	.036
<b>Knowing How to Perform Breast Self-Exam</b>								
Yes	79	57.2	12(6-14)	21(12-30)	20(16-23)	16(10-20)	11(8-40)	35(24-48)
No	59	42.8	10(8-15)	22(12-27)	20(5-22)	15(11-20)	11(8-38)	36(21-44)
Z			-4.604	-.618	-.328	-1.020	-.196	-.356
p value			.000	.536	.743	.308	.845	.722

## CONCLUSION AND RECOMMENDATIONS

Breast self-examination (BSE) continues to be an important step in early detection and awareness of breast cancer in many underdeveloped countries. The risk of breast cancer in young women is increasing day by day, and regular examinations help to

recognize possible signs of cancer and enable immediate intervention. Health institutions organize regular education programs to increase awareness of breast cancer and encourage early diagnosis. There are simple techniques that teach women to examine their



breast tissue regularly. This usually involves manually examining their breast tissue in front of a mirror, with their arms up or lying down, moving in circular or semicircular motions at different pressure levels, and looking for any abnormalities in the breast tissue. Simulation and peer education provide a supportive environment that encourages students to learn from each other. In this way, students develop the habit of performing regular breast examinations and thus provide motivation and confidence in each other. Acquiring these skills within various professional groups in the health sector benefits both individual and community health. In this study, an increase in both the knowledge level and intervention skills of the students was observed after simulation, peer education and brochure support. Based on the research results, it is recommended that applied training be planned

in associate degree programs to increase students' awareness of breast cancer and SBE, that the training be repeated at regular intervals, and that changes in their knowledge, attitudes, and practices be monitored. The nursing profession plays a key role in planning and implementing such training. Nurses play a critical role in increasing individuals' health awareness, providing early diagnosis skills, and improving public health. The guidance of nurses during the training process ensures that students learn and apply techniques correctly. Nurses, as role models in training, contribute to students' awareness of protecting not only their own health but also the health of other individuals in society. Therefore, the educational roles of nurses contribute significantly to the development of individuals' health beliefs and their positive contribution to public health in the long term.

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