

The Effect of Using Video Based Training on University Students' Knowledge and Attitude regarding Breast Self-Examination

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Abstract: Breast cancer is considered a major health problem among a large number of females world-wide. Breast self-examination is one of the effective methods for the early detection and control of breast cancer. Education plays an essential role in increasing breast self-examination practice. Regarding this, the present study conducted to measure knowledge and attitude of female university students about breast self-examination. **Aim:** this study aimed to determine the effect of using breast self-examination training based video on undergraduate university students' knowledge and attitude. **Methodology:** One group Pre-test-Post-test research design was adapted. 63 students were selected through convenient sampling technique from different colleges in Kingdom Saudi Arabia. Research data were collected utilizing the breast self-examination questionnaire and students' evaluation about training video. **Results:** It was found that students' knowledge scores in the post-test was higher than the pre-test ($P < 0.001$). Most of the students (95.2%) agreed that the breast self-examination video was very effective educational tool. **Conclusion:** this study shows that training video improves students' knowledge and attitude regarding breast self-examination. It is also considered as a potent learning tool for students because it is available any time for reviewing the steps and includes comprehensive information. In addition, breast self-examination training video should be adopted by health educators in delivering health-related information to the individuals.

Keywords: Breast self-examination- Breast cancer - Instructional media- Knowledge- video based learning – university students.

1. INTRODUCTION

Breast cancer is considered the major health problem among a large number of females world-wide. It is considered the most popular malignancy and represents the next primary cause of cancer deaths after lung cancer.

⁽¹⁾According to the American Cancer Society (ACS) reported that from 2006 to 2015, female breast cancer incidence rates increased slightly, by 0.4% per year and expected that 42,260 breast cancer deaths will occur in 2019.⁽²⁾

In addition, World Health Organization (WHO) estimated that 627,000 females died from breast cancer in 2018 that is about 15% of all cancer deaths among females.⁽³⁾ In the Kingdom of Saudi Arabia (KSA), Alotaibi et.al. (2018) illustrated that out of 5,411 deaths, 708 (13.08%) were related to breast cancer and confirmed that increase the prevalence of mortality from breast cancer among Saudi Arabian females. Most of these deaths happened in Riyadh, Makkah, and the eastern region of KSA.⁽⁴⁾ In addition, Al-Qahtani (2007) stated that the second most common malignancy in Saudi women is breast cancer.⁽⁵⁾

There are different risk factors that contribute to increase the prevalence of breast cancer among females such as decrease level of awareness, late detection, lack of screening, and being fearful from the disease. Furthermore, family history of

breast cancer, advanced age, life style, use of hormonal thereby such as estrogen and progesterone, and early menstruation or late menopause.^(6,7)

Early detection and screening are considered as a cornerstone for controlling of breast cancer and decreasing related mortalities.⁽⁸⁾ For these reasons, ACS (2010) recommended three screening methods for breast cancer which include: clinical breast examination (CBE), mammography, and breast self-examination (BSE).⁽⁹⁾

BSE is the most appropriate, economical, safe, and preventive method that can be used by the female herself requires no specialized personnel or equipment and used mainly to identifying any changes in the breast structures. It is also a significant method in order to detect the cancer at early stages.⁽¹⁰⁾ Therefore, all the women aged above 20 years should perform BSE routinely on a monthly basis for raising awareness on breast cancer. The effectiveness of the BSE found to reach 78% of detecting the breast cancer. Moreover, females are encouraged to practice BSE in order to overcome the fear, stigma, and restrictions.^(7,11)

In many countries, there are cultural attitudes that make females feel embarrassing to obtain any information about BSE. Although the importance associated with BSE, a small number of females regularly perform it and several do not even know the steps of it. So, as a health care system, has a responsibility to give information on how to perform BSE correctly especially for college students.⁽¹²⁾

Educating the college students the skills of BSE is an essential issue today. Education is accomplished more effectively and efficiently through appropriate presentations using appropriate instructional media. The benefits of using of instructional media in teaching will help in gaining more knowledge and skills and at same time improve the attitude of the learners. There are different methods of media such as the use of pictures, posters, booklet, television, and video. Video is the most common media and becoming more prominent in education as well as training. It plays a vital role in delivering information, behavior modeling, and attitude change as well as teaches skills through the utilization of two senses vision and hearing.^(13, 14) Some researches revealed that television and videos have a better effect on the knowledge level.^(15, 16)

One study reported that low level of knowledge among students needs a rapid action through establish a health education and awareness programs directing toward college students to provide breast cancer prevention education.⁽¹⁷⁾ Therefore, this study aimed to improve the knowledge and attitudes toward BSE among the university students.

2. AIM OF THE STUDY

This study aimed to determine the effect of using video based training on university students' knowledge and attitudes regarding BSE.

3. RESEARCH HYPOTHESES

1. Students who used video based training exhibit a higher knowledge score in BSE
2. Students who used video based training exhibit positive attitude toward BSE

4. MATERIALS AND METHOD

Materials

Research design: One group Pretest Posttest research design was used to conduct this study

Setting: This study was carried out at university students' private housing in KSA.

Subjects: The study subjects were comprised of 63 undergraduate university students selected through convenient sampling technique. The students were enrolled in medical and none medical specialties. The students were selected based on these criteria:

- Female and undergraduate
- No medical history of breast cancer

Tools: Two tools were used by the researchers for the purpose of data collection:

Tool I: BSE Knowledge and Attitude Questionnaire

This tool was developed by the researchers based on the related literature and it was utilized to assess university students' knowledge and attitude regarding BSE. ^(12, 18, 19) It was translated into simple Arabic language to be understood form all participants. It was developed by using Google Form and published online. It was also divided into 3 parts:

Part (1): Socio-demographic data such as age, marital status, name of specialty.

Part (2): Assessment of student Knowledge on BSE. It includes 14 questions in the form of yes or no and MCQ questions. Scoring system ranged from (0) for the incorrect answer and (1) for the correct answer. The total score of knowledge assessment was 45 points or I don't know answer took zero. Total score for all questions reached 14 grades and it was categorized as:

Poor knowledge: less than 50%

Fair knowledge: 50 -< 75%

Good knowledge: 75% or more

Part (3): Questions regarding the attitude of BSE. It is used to measure the students' attitude toward BSE and it consists of 11 statements which answered using a four-point Likert scales ranged from: strongly disagree (1) to strongly agree (4).

Tool II: Students' Evaluation of the Training Video

It was developed by the researchers based on the relevant literatures to determine the opinions of students related to the use of self-directed video, its objectives, time, sound and content. ^(14, 20) Responses ranges from strongly disagree (1) to strongly agree (4). It was developed by using Google Form and published online.

Method

An official permission to conduct the study was obtained from the administrative authorities at nursing department of selective college after explanation of the purpose of the study. Tool I and II was developed by the researchers based on the related literatures. Tools were tested for content validity by in the related study field and the needed modifications were made. Tool I and II were tested for inter-reliability. They were 0.72, 0.83 respectively. A pilot study was carried out on seven students to assess the clarity of the tools and then the necessary modifications were done accordingly. The current study was conducted through three phases: preparation, implementation, and evaluation phase.

Preparation phase: during this phase, the BSE content and evaluation tools were developed and the examiners were prepared.

a. Content

- The educational goal and objectives were determined. The content was selected and organized based on recent literature and was revised by experts in the fields. Changes were made accordingly.

b. Developing the script

- The script was developed by the researcher and was revised by experts in the fields. The necessary changes were done according to their recommendation.

c. Setting for video

- Female nursing lab at Inaya Medical College was selected as location for shooting. The adult simulator was also prepared for demonstration of BSE. The setting was checked before shooting to ensure its appropriateness.

d. Actor

- One female nursing student volunteered to participate in the demonstration of the BSE and agreed to be photographed. Written consent was obtained. The actor was trained in BSE techniques and skills by one of the faculty member expert in maternity nursing. The training was done for one week which included demonstration, practice, and re-demonstration.

Production phase

- This phase includes taking the picture, processing the video, editing the pictures, recording music, editing and recording narration as well as preparing titles and captions. It was produced through using Video Maker and ProShow Gold programs. The first draft of the training video was reviewed by experts and based on their recommendations; the final copy of a 6 min video was developed.

Implantation phase

- All students were tested for their knowledge and attitudes about BSE before sending video to them using the online questionnaire.
- After that the self-directed video was distributed to all study participants to be oriented about BSE using the social networking. The video duration was approximately 6 minutes.

Evaluation phase

- Posttest was given after one week from the video viewing. All students were evaluated for their knowledge and attitudes as well as their opinions regarding the developed video using tool I and II.

Ethical considerations

- A written informed consent was obtained from all university students after explanation of the purpose of the study.
- Confidentiality, anonymity and privacy were maintained

5. STATISTICAL ANALYSIS

The data were entered into SPSS system files (SPSS package version 22) using personal computer and analysis and interpretation of data were conducted. The following statistical measures were used:

- Descriptive statistics including number and percent as well as mean and standard deviation.
- The significance of the obtained results was at the 5% level. The used tests were Marginal Homogeneity Test and paired samples T test to compare between variables.

6. RESULTS

Figure (1): Distribution of the university students according to their socio-demographics data

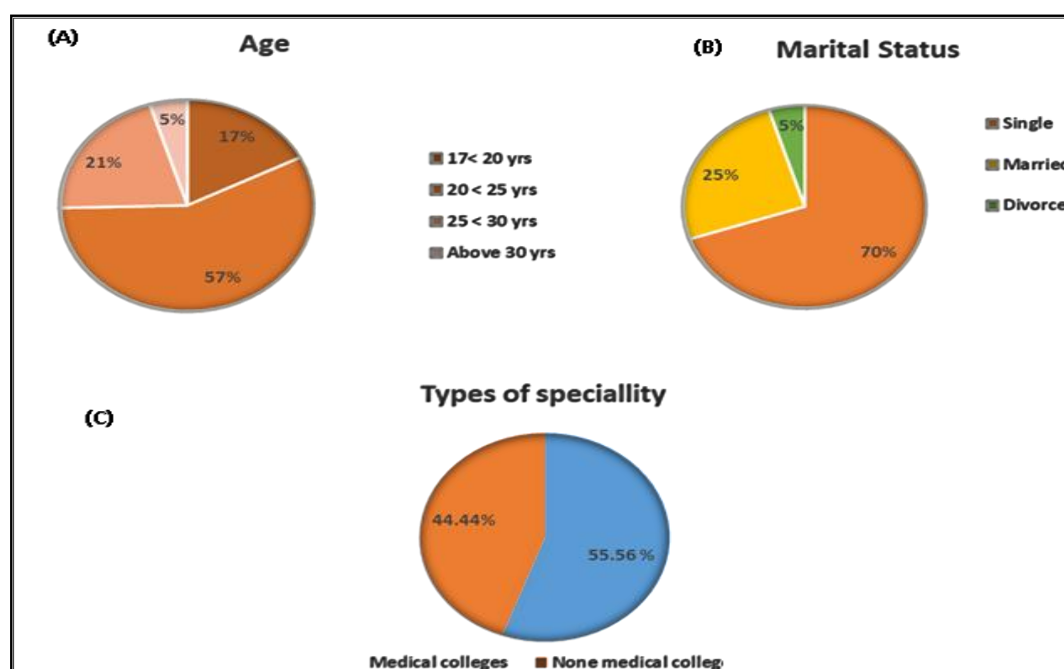


Figure (1) illustrates the distribution of the university students according to their sociodemographic data. Regarding to figure (A), the majority (57.1%) of students' age ranged between 20 to less than 25 years while, the minority (4.8%) of them were more than 30 years. In relation to figure (B), 69.8% of students were single followed by 25.4% of them were married. As for figure (C), more than half (55.56%) of students studied medical sciences whereas, 44.44% of them studied non-medical sciences.

Table (I): Pre and post knowledge level of university students regarding BSE

Total knowledge level	Pre-test		Post-test	
	No.	%	No.	%
- Poor	26	41.3	0	0
- Fair	28	44.44	14	22.2
- Good	9	14.3	49	77.8

Table (I) shows the total knowledge level of the university students regarding BSE. Nearly half (41.3%) of the students had poor knowledge regarding BSE prior the introduction of video. The picture had changed dramatically after the video, where the majority of the students (77.8%) had good knowledge level and none of them showed poor level of knowledge.

Table (II): comparison of pre-test and post-test knowledge of students regarding BSE

Knowledge regarding BSE	Mean	SD	t	P
Pretest - posttest	-1.04762	0.79	-10.50	0.000*

t= paired samples t test

p: p value for association between different categories

*: Statistically significant at $p \leq 0.05$

Table (II): shows the comparison of pre-test and post-test knowledge of students regarding BSE. It revealed that the mean post-test knowledge score was higher than the mean pre-test score. So, there is a significant difference between pre-test and post test score ($p= 0.000$).

Table (III): Students' attitudes toward breast self-examination (pre and post video)

Students' attitudes toward breast self-examination	Pre								Post								MH	p
	SA		A		D		SD		SA		A		D		SD			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
During BSE makes me feel so funny	10	15.9	13	20.6	30	47.6	10	15.9	4	6.3	10	15.9	41	65.1	8	12.7	3.153*	0.002*
BSE will be embarrassing to me	11	17.5	14	22.2	27	42.9	11	17.5	6	9.5	8	12.7	37	58.7	12	19.0	4.123*	<0.001*
Doing BSE is wasting time	7	11.1	2	3.2	22	34.9	32	50.8	2	3.2	0	0.0	29	46.0	32	50.8	2.558*	0.011*
Doing BSE makes me feel unpleasant	12	19.0	14	22.2	28	44.4	9	14.3	16	25.4	14	22.2	25	39.7	8	12.7	3.00*	0.003*
All women should do BSE	49	77.8	9	14.3	4	6.3	1	1.6	44	69.8	17	27.0	1	1.6	1	1.6	0.707	0.480
I really care about my breasts	34	54.0	24	38.1	3	4.8	2	3.2	32	50.8	28	44.4	2	3.2	1	1.6	0.447	0.655
I'm not afraid to think about the breast cancer	16	25.4	21	33.3	19	30.2	7	11.1	14	22.2	31	49.2	16	25.4	2	3.2	2.840*	0.005*
A void BSE because I worry about having breast cancer	12	19.0	9	14.3	22	34.9	20	31.7	10	15.9	17	27.0	21	33.3	15	23.8	2.496*	0.013*
Interested in doing BSE	34	54.0	21	33.3	8	12.7	0	0.0	36	57.1	18	28.6	7	11.1	2	3.2	0.447	0.655
Always search for information regarding BSE from the internet, magazine, and newspaper	21	33.3	25	39.7	14	22.2	3	4.8	25	39.7	27	42.9	8	12.7	3	4.8	3.162*	0.002*
Discuss with my friends about BSE	16	25.4	27	42.9	13	20.6	7	11.1	20	31.7	30	47.6	10	15.9	3	4.8	3.873*	<0.001*
Total score	32.92 ± 2.46								33.30 ± 2.61								t= 4.432*	<0.001*

SA: Strongly agree A: Agree D: Disagree SD: Strongly disagree

MH: Marginal Homogeneity Test

p: p value for association between different categories

*: Statistically significant at $p \leq 0.05$

Table (3) shows the attitudes of the students regarding the BSE before and after the administration of the video. There is a statistically significant difference between the students attitude regarding BSE before and after the video ($p= 0.001$). Their

attitudes became more positive after the session in most of the items of the attitude scale. The difference was statistically significant in the following items: during BSE makes them so funny ($p = 0.002$), BSE is embarrassing for them ($p=0.001$), doing BSE is a wasting of time ($p = 0.011$), doing BSE makes them feel unpleasant ($p=0.003$), they are not afraid to think about the breast cancer ($p=0.005$), they always search for information regarding BSE ($p=0.002$), and they discuss with their friends about BSE ($p = 0.001$).

Table (IV): Distribution of students regarding their satisfaction with the training video

Items	N = 63					
	Strongly Agree		Agree		Disagree	
	No.	%	No.	%	No.	%
The basic goals of the video were clear to me	52	82.5	11	17.5	0	0.0
The video contains clear and understandable information	47	74.6	13	20.6	3	4.8
The explanation used in the video is appropriate and effective	41	65.1	19	30.2	3	4.8
The explanation of the steps of self-examination of the breasts in video was easy and orderly	31	49.2	30	47.6	2	3.2
The video time was enough	31	49.2	30	47.6	2	3.2
The images used within the video are clear	33	52.4	30	47.6	0	0.0
Video sound is clear and understandable	33	52.4	25	39.7	5	7.9
The video explanation was interesting	37	58.7	22	34.9	4	6.3
The video helped me improve self-examination practices	41	65.1	22	34.9	0	0.0
The video helped me improve attitudes toward self-examination	39	61.9	21	33.3	3	4.8
The video is suitable for all girls	40	63.5	19	30.2	4	6.3
In general, video is a good educational tool	39	61.9	21	33.3	3	4.8

Table (IV): demonstrates the distribution of students regarding their satisfaction with the training video. It was found that all of the students (100%) agreed that the basic goals of the video were clear to them; the video contains clear images, as well as video helped them to improve BSE practices. Almost all of the students (95.2%) declared that the video in general was a good educational tool. However, only 7.9% of them stated that the video sound was unclear and unified especially at the beginning of the video.

7. DISCUSSION

BSE is one of the paramount screening methods for breast cancer. ⁽⁸⁾ It is very essential to educate and encourage young women to regularly carry out BSE so as to the disease can be detected in early stages and before it becomes aggressive. ⁽²¹⁾ So the purpose of this study was to increase the students' awareness and knowledge about BSE.

Regarding the students' knowledge about BSE, the mean post-test knowledge score was higher than the mean pre-test score with a significant difference between pre-test and post test score ($p = 0.000$). The poor knowledge prior to the training video could be attributed to lack of specialized centers which give information resources, shortage of health education programs in mass media, schools and university especially non-medical ones. The improvement of knowledge post-program suggests the effectiveness of the video which includes clear and simple language. This result is in line with the result of Temel et. al. (2017) revealed that there is a statistically significant difference between the pre-test and the post-test knowledge about breast cancer and BSE ($t = 5.78$, $p = 0.01$). ⁽²²⁾ This study results is also consistent with the results of another study done in Chennai 2014. It was revealed that there was a statistically significant difference ($p = 0.05$) between the pretest and the posttest scores of knowledge regarding BSE. ⁽¹⁸⁾ In addition, Abasi et.al. (2018) illustrated a significant difference between the two groups in relation to their knowledge after training stage ($P=0.000$). ⁽²³⁾ So that the training based on video has a significant effect in increasing the knowledge regarding BSE among the female students. This result

may be due to the fact that the video-based teaching offers a distinctive opportunity to present, teach, and adopt information; it is also excellent method for focusing the student's concentration on specific details based on the materials.⁽²⁴⁾

Considering the students attitude regarding BSE, there was a statistically significant difference between the students attitude regarding BSE before and after the video ($p=0.001$). Their attitudes became more positive after the training video in most of the items of the attitude scale. This study result is consistent with the result of an Egyptian study done by Sief et. al. (2000), in which the developed training program of BSE had promoted the women's positive attitude towards BSE with a statistically significant difference between before and after the program ($p=0.01$).⁽²⁵⁾ It also supported by Bahmani et.al. (2019) who found that the mean score of attitude regarding BSE in the study group increased in the last part of the study ($P<0.001$).⁽²⁶⁾ This could be related to the lack of knowledge regarding breast cancer and lack of importance of BSE before program that affected their attitudes negatively. With the introduction of the program in both studies, the subjects' attitudes changed positively. This ensures the effectiveness of the video and the readiness of subjects for change. Almost all the subjects in the present study stated that all women should do BSE and suggesting the importance of it in early diagnosis of breast cancer.

This study result is not in line with a study done by Ayed et. al. (2015) showed that only 7% of the respondents agreed that during the BSE make them so funny compared to 36.5% of students in the present study before the introduction of video. In addition, about one fourth of Ayed's study respondents said that BSE was embarrassing to them compared to 39.7% in the present study. None of Ayed's study respondents agreed that BSE is a wasting of time compared to 14.3 % in the present study. Only 6% of Ayed's study respondents showed that doing BSE makes them feel unpleasant compared to 41.2% in the present study.⁽¹²⁾ In general, most of Ayed's study respondents had positive attitude towards BSE. Moreover, a Nigerian study of Bassey et. al. (2011) also showed that the majority of students had positive attitude towards BSE.⁽²⁷⁾ The difference between the two previously mentioned studies may be related to that all the participants are nursing students, while in the present study are medical and non-medical students. So, some of them has no idea about breast cancer and BSE. This also can be supported by the 15.5% of Ayed's study respondents had good knowledge regarding BSE, compared to only 7.9% of the present study respondents. The more knowledge about breast cancer and the importance of screening made the students attitude more positive towards BSE.

In relation to the students' satisfaction with the video based training, it was found that almost all of the subjects are strongly satisfied with this method of self-directed learning. All the subjected (100%) stated that the aims of the video were clear to them, the images used in it were also clear, and that the video helped them to improve BSE practices. This may be due to the fact that the topic was relevant and important to them and it was focused on their needs to know more about health care practices. Moreover, the video is now suitable for today's generation and for different learning styles of students. This could be supported by the finding of Donkor (2010), that the users of video-based instructional materials displayed significantly superior craftsmanship, better knowledge and skills.⁽²⁸⁾ The use of video in the delivery of practical lessons is acknowledged in the literature also. For example, Mishra (2001) stated that video is beneficial in showing practical and real life situations and activities and that it can be also used to capture hazardous and costly experiments for presentation and for recurrent use.⁽²⁹⁾ Choi and Johnson (2007) stated that video based teaching is an effective method than text or traditional lecture method because it improves students' motivation and satisfaction during the learning process.⁽³⁰⁾

8. CONCLUSION

Based on the findings of this study, BSE training video improved students' knowledge and attitudes compared to the baseline. It is also considered as a potent learning tool for students because it is available any time for reviewing the steps and includes comprehensive information. In addition, BSE training video should be adopted by health educators in delivering health-related information to the individuals.

9. RECOMMENDATIONS

More health education and training program should be performed to increase public awareness about the breast cancer and the importance of BSE and further researches should be done using different settings and strategies to compare the results of the current study.

10. LIMITATIONS

This study was limited by the small sample size and there was also no control group to assess the difference with other approaches. In addition, there was no follow-up to assess the extent to which the participants' knowledge acquired was retained and applied.

11. CONFLICT OF INTEREST

All authors have no conflict of interest

ACKNOWLEDGEMENTS

The current study was related to the undergraduate nursing student's research project, so we would like to express our gratefulness to the Scientific Research Unit in Inaya Medical College, KSA. The authors would like to thank my students Mrs. Fatimah Aljumah, Danah Alshari and Nouf Hawsawi for their cooperation during the study.

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