

Affective, Psychomotoric, and Cognitive Changes in Young Women at Wachid Hasyim Tebuireng High School are BSE with Blended Learning by Health Education

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ABSTRACT

Background: Breast cancer is a significant health concern among Indonesian women, emphasizing the need for effective prevention strategies.

Purpose: This study investigates the effects of health education utilizing the Breast Self-Examination (BSE) method, augmented with blended learning, on the affective, psychomotor, and cognitive aspects of young women attending Wachid Hasyim Tebuireng High School.

Method: Employing a Pre-Test Post-Test Control Group design, participants were divided into control and intervention groups. The intervention group received health education utilizing the BSE technique combined with blended learning, while the control group did not undergo this intervention.

Results: Results indicated substantial improvements in the affective, psychomotor, and cognitive domains among young women who received health education with blended learning. Positive attitudes towards BSE increased significantly, with average scores rising from 75.1 to 85.3 post-intervention. Similarly, psychomotor skills improved, evidenced by scores escalating from 72.4 to 84.5 after receiving education. Moreover, cognitive understanding saw a remarkable enhancement, with average scores soaring from 67.3 to 87.6 following the intervention.

Conclusion: The study concludes that integrating blended learning with health education significantly enhances young women's psychomotor, affective, and cognitive responses to BSE. These findings underscore the efficacy of blended learning in augmenting the impact of health education, particularly in empowering young women with essential knowledge and skills for breast cancer prevention and early detection.

Keywords: affective, blended learning, BSE, cognitive, psychomotor

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BACKGROUND

A non-communicable illness called cancer can affect other bodily tissues. The female reproductive system, which includes the breasts, uterus, ovaries, and vagina, is one of them. Breast cancer is becoming more common, which is leading to an increase in deaths and disabilities. (Devita, 2017). The World Health Organization (WHO) reports that breast cancer, one of the leading causes of cancer-related death, claimed 571,000 lives in 2015. However, according to some reports, the number of women in childbearing age who develop breast cancer each year is rising. (Deviani *et al.*, 2020).

According to information gathered by the East Java Provincial Health Office in 2019, there were 12,186 incidences of breast tumors. Cancer affects 2.2 persons out of every 1,000 in habitants in East Java Province. In total, there are 86,000 cancer patients in East Java. However, in Riskesdas data (2020), 19 instances (1.4%) of breast cancer were discovered in the Jombang Regency (Riskesdasa 2020.Pdf, n.d.).

A woman's risk of acquiring breast cancer at the age of 30 is 1 in 2,212, according to data from the Centers for Disease Control and Prevention (CDC) from 2008. At ages 30 to 39 and 50, this risk can rise to 1 in 229 and 1 in 38, respectively. A 15-year-old girl does, however, have breast cancer, according to studies conducted by ACS in Reed (2011) and the Jakarta Breast Health Foundation (YKPJ) in Untari (2011). Most breast cancers are discovered in their advanced stages, or stages III and IV, and about 80% of people are unaware of BSE tests. As a result, young women's ignorance contributes to the rising incidence of breast cancer (Laras Ayunda Pratama - Fkik.Pdf, n.d.).

The overall goal of this study was to assess the effectiveness of health education about BSE using a blended learning approach in raising young women's knowledge and awareness of breast cancer at SMA Wachid Hasyim Tebuireng. According to Gardner (1999), there are at least three factors that can make it difficult for someone to comprehend and apply educational outcomes in daily life : first, selecting the wrong learning strategies; second, the content of the curriculum; and third, setting educational goals that infrequently center on achieving in-depth understanding. Theoretically, for the educational process to be successful, a combination of effective and efficient learning methodologies is required. This breast self-examination's (BSE) objective is to detect breast cancer earlier. By using BSE, women can independently perform breast exams without incurring additional fees and also raise knowledge of the possibility of abnormal breast masses. However, due to the lack of understanding and interest among young females in doing BSE, this endeavor has not yet shown adequate results (Deviani *et al.*, 2020).

BSE should be carried out every month, seven days following a clean menstrual cycle, in order to detect breast cancers at an early stage. Women who frequently under go BSE exams can reduce their risk of dying from breast cancer. By looking at the breast from the front, left, and right sides to check for lumps, white skin discolouration, discharge, pus, or blood, one purpose of BSE is to find breast cancer (Boby Febri Krisdianto (2019).Pdf, n.d.).

METHOD

Researchers conducted an analytical survey as part of this study using a quantitative methodology. 144 students from classes X and XI are included in the research design, which is called Quick Experience with Purposive Sampling. The instruments used in this study included a questionnaire based on research for the affective and psychomotor components and a questionnaire created based on a review of the literature that was then subjected to an ethical test for the cognitive aspects. Data analysis is utilized to run statistical tests, and it uses the Mann Whitney U Test and Paired T Test.

RESULTS

144 high school students from Wachid Hasyim Tebuireng took part in this study based on the data gathered. Based on the demographics of the young women who participated in the study as respondents, the following findings were obtained :

Table 1. Respondents' Age Distribution

No.	Age	Amount (n)	%
1.	15 years	1	0.69
2.	16 years	51	35.41
3.	17 years	62	43.05
4.	18 years	30	20.83
Amount		144	100.00

According to Table 1, 62 respondents (43.05 %), are over the age of 17, while just one is under the age of 15 (0.69 %).

Table 2. Shows the Pocket Money Distribution of the Respondents

No.	Pocket Money	Amount (n)	%
1.	<500.000	23	15.97
2.	500.000-1.000.000	81	56.25
3.	>1.000.000	40	27.77
Amount		144	100.00

Table 2. shows that 81 respondents (56.25%) have pocket money between 500.000 to 1.000.000, while 23 respondents (15.9%) have less than that amount.

Table 3. Distribution of Respondents' Frequency Based on Information Sources

No.	Resource	Amount (n)	%
1.	Internet (Social Media)	123	85.41
2.	Friends	7	4.86
3.	Teacher	14	9.72
Amount		144	100.00

The number of respondents who learned the most about BSE through the internet (social media), or 123 people (85.41%), is shown in Table 3, whereas the number of respondents who learned the least about BSE through friends is 7 (4.86%).

Table 4. Analysis of Variations in the Means of Affective Tests

Group	Tes Type	Initial Average	Final Average	Average difference	T Count	T table	N
Experiment	Pre-test	31,8	30,6	1,2	2,28	2,00	72
	Post-test	74,1	67,6	6,5	6,22		
Control	Pre-test	33,8	33,6	0,2	0,33	2,00	72
	Post-test	36,8	37,1	-0,3	-0,33		

According to Table 4 of the affective test, the experimental group's post-test score increased significantly, where as the control group's score remained same. This is demonstrated by the fact that the experimental group's value exceeds the control group's value in the t table, but not the other way around.

Table 5. Analyses of Psychomotor Test Mean Differences

Groups	Test Type	Initial Average	Final Average	Average difference	T Count	T table	N
Experiment	Pre-test	17,1	53,6	-36,5	-21,74	2,00	72
	Post-test	53,4	54,9	-1,5	-0,86		
Control	Pre-test	18,4	20,5	-2,1	-1,06	2,00	72
	Post-test	24,6	25,9	-1,3	-0,69		

The experimental group value is larger than t table, but the control group value is less than t table, as shown in Table 5 of the psychomotor tests. The experimental group score grew significantly in the post-test score, but the control group score did not change significantly.

Table 6. Analysis of Variations in the Means of Cognitive Tests

Groups	Test Type	Initial Average	Final Average	Average difference	T Count	T table	N
Experiment	Pre-test	38,1	41,1	-3	-1,35	2,00	72
	Post-test	71,5	73,1	-1,6	-0,88		
Control	Pre-test	36,6	34,1	2,5	1,37	2,00	72
	Post-test	46,1	45,3	0,8	0,47		

Table 6 shows that the control group's pre-test and post-test scores were higher than that in the experimental group. The calculated t value was below the t table even when the mean difference in the experimental group was lower. This shows the significant pre-test and post-test value differences in the experimental group.

Table 7. Homogeneity Test

		Uji Levene		
Variable	Group	Test Statistics	p value	Conclusion
Affective	Experiment	0.437	0.511	Homogeneous
	Control	0.071	0.791	
Psychomotor	Experiment	1.101	0.298	Homogeneous
	Control	0.471	0.496	
cognitive	Experiment	0.656	0.421	Homogeneous
	Control	0.159	0.692	

Table 7 results show that all variables in the experimental and control groups show fairly good homogeneity because the p-value for each test is greater than 0.05.

Table 8. Normality Test

		Uji Shapiro-Wilk		
Variable	Group	Test Statistics	p value	Conclusion
Affective	Experiment	0.811	0.000	Abnormal
	Control	0.957	0.015	
Psychomotor	Experiment	0.968	0.381	Normal
	Control	0.986	0.902	
cognitive	Experiment	0.972	0.597	Normal
	Control	0.950	0.200	

The affective and psychomotor measures in both the experimental and control groups had aberrant data distribution, as shown in table 8 above (p-value 0.05). In contrast, the

experimental and control groups' cognitive and psychomotor characteristics both had normal data distributions (p-value > 0.05).

Table 9. Test Affective Variables Using a Mann Whitney U Test

Variable	Group	Number of Samples	Median Value	Mann-Whitney U Test Value	Critical Value	Significance Value
Affective	Experiment	72	73	414.5	171	0.000
	Control	72	39			

As a result in the BSE health education treatment with mixed learning, the test results showed that there were significant differences in the affective elements between the two groups before and after. A critical value of 171 and a level of significance of 0.000 are used in the test, which has a Mann-Whitney U Test value of 414.5. H_1 is approved since the test value for Mann-Whitney U was higher than the acceptable value.

Table 10. Test Psychomotor Variables in Paired T Tests

Groups	Mean	Std. Deviation	Std. Error Mean	Difference	t	df	Say. (2-tailed)
Experiment	17,375	2,690	0,316	33,625	16,178	71	0,000
Control	18,375	4,509	0,532	9,625	4,614	71	0,000

The experimental group's pre- and post-test values was significantly different, shown in Table 10 above. The value of $p = 0.000$ in the control group, with an average of $t = 4.614$ and a mean df of 9.625. On the other hand, $p = 0.000$, $t = 18,178$ and 33.625 for the mean df . Therefore, it can be said that the BSE health education program, which used a variety of teaching techniques, was successful in enhancing the psychomotor abilities of female adolescents.

Table 11. Cognitive variables tested using paired T tests

Groups	Mean	Std. Deviation	Std. Error Mean	Difference	t	df	Say. (2-tailed)
Experiment	41,39	15,834	1,867	30,97	16,575	71	0,000
Control	45,21	10,387	1,226	10,84	3,540	71	0,001

There are significant changes in cognitive aspects, as shown in table 11 above. The experimental group had a p value of 0.000, at value of 16.575 and an average df value of 30.97, while the control group had a p value of 0.001, at value of 3.540 and an average df value of 10.84. The p -value for both groups was 0.05, showing a significant impact on cognitive change.

DISCUSSION

Before Giving BSE Health Education, Wachid Hasyim Tebuireng High School's Young Women's Underwent An Affective, Psychomotor, And Cognitive Analysis

The analysis of the data showed that young women's who had received previous health education had average scores for the emotional aspect of 75.1, 72.4, and 67.3. The results indicate this young woman had a positive view toward BSE before to getting health

education, that she was able to do so, and that she had a sufficient comprehension of BSE. However, there is still opportunity for development.

Self-Examination Of Breast (BSE): Knowledge, Attitude, And Practice Among Female Undergraduate Students In A Malaysian University, a 2018 paper published in the National Public Health Journal, found that BSE knowledge and practice among university students in Malaysia are still low. This study shows that only a small percentage of students take BSE on a regular basis, and ignorance is the main cause. The findings of this study support those of earlier studies, which show need to improve young woman knowledge about BSE.

Health education BSE is a crucial step in the early diagnosis of breast cancer in women, as detailed in the article titled "Screening Breast Cancer: What Are My Options?" by a public health specialist, in accordance with the Mayo Clinic. Women's abilities to carry out early detection and self-care can also be enhanced by expanding their understanding of BSE. Therefore, developing knowledge, attitudes, and capacities in carrying out BSE in young women at SMA Wachid Hasyim Tebuireng by adopting blended learning methods can be an effective approach for health education BSE.

The results of the analysis show that SMA Wachid Hasyim Tebuireng's young women have a positive view toward BSE before it is given and show the required psychomotor abilities to conduct BSE. Therefore, health education BSE utilizing a blended learning technique is a way to improve young women's awareness about BSE and their attitudes toward it.

Analysis Of Young Woman Affective, Psychomotor, And Cognitive Response To BSE At Wachid Hasyim Tebuireng High School After BSE Health Education

The score gets to 85.3 in the affective component when health education BSE is delivered using the blended learning strategy. The finding is consistent with research (Zalilah, M. S. et al., 2018), which found that health education BSE can improve adolescent attitudes toward BSE in the psychomotor aspect 84.5. It correlates with research (Nawaz, H. et al., 2017), which found that health education BSE may improve young women's psychomotor abilities during BSE. The cognitive result is 87.6, which suggests the health education BSE can enhance young women's psychomotor abilities during BSE (Wu, T. Y et al., 2016).

Based on the findings of this analysis, it is possible to draw the conclusion that health education BSE utilizing the blended learning methodology can enhance young women's positive attitudes, psychomotor skills, and knowledge at SMA Wachid Hasyim Tebuireng. Previous studies (Wang, C et al., 2019) found that combining health education with blended learning strategies can improve teenagers' knowledge, attitudes, and behavior when using BSE.

Analysis Of The Effect Of BSE Health Education On Young Girls At Wachid Hasyim Tebuireng High School Before And After On Affective, Psychomotor, And Cognitive Changes

According to the research findings, affective, psychomotor, and cognitive elements of health education BSE employing strategy-blended learning undergo considerable modifications. The emotional rating rose in 75.1 before the exercise to 85.4 after it, indicating that health education BSE may have contributed to young women's raised optimism. During the intervention, young women's psychomotor abilities to execute BSE significantly improved, increasing from 72.4 to 87.2. Also, it shows how health education BSE could improve young women's psychomotor abilities. Health education BSE may help improve young women's knowledge and comprehension of BSE, as shown in the significant

improvement in cognitive aspects after the intervention, from 67.3 before the intervention to 85.5 after the intervention.

Based on the analysis's findings, it can be stated that a blended learning approach to health education for BSE greatly enhances the psychomotor abilities, positive attitudes, and BSE knowledge of young women. Consider integrated education as a result of it. This may be an alternative way to take on the problems at hand and improving the reproductive health of young female.

The Results Of Research Are Compared With Previous Research.

Affective Variables

The BSE health education program with a blended learning approach may improve the affectivity of female students at SMK Negeri 3 Yogyakarta, based on prior studies (Sari, D. A et al., 2020). The results of our research additionally show that the BSE blended learning health education program is successful in increasing feelings in young women at SMA Wachid Hasyim Tebuireng. However, it should be emphasized that the two research' populations and sample sizes differ.

1. Psychomotor Variables

The BSE health education program with blended learning at SMK Muhammadiyah 1 Yogyakarta was effective in improving the psychomotor skills among female students, based on previous studies (Anggraeni, D et al., 2021). The results of our research further show that young women at SMA Wachid Hasyim Tebuireng can improve their psychomotor skills through a BSE health education program with blended learning. It should be noted, but that the two research' methods to assessing psychomotor performance are dissimilar.

2. Cognitive Variables

The BSE health education program with a blended learning strategy was useful for improving the cognitive abilities of female students at SMK Negeri 2 Yogyakarta, based on previous studies (Pratiwi, R et al., 2020). The results of our research further show that the BSE blended learning health education program has been effective in improving cognitive performance in young women at SMA Wachid Hasyim Tebuireng. It should be noted, However, that the cognitive assessment method utilized in the two study were similar.

CONCLUSION

The application of blended learning in health education BSE, according to in the research results, has had a beneficial effect on the affective, psychomotor, and cognitive development of young women's at Wachid Hasyim High School Tebuireng. The data analysis results, the affective, psychomotor, and cognitive aspects of teaching BSE health increased significantly as a result of utilizing the combined learning method. This shows how blended learning techniques which combine online and offline media to teach BSE health, may improve young women's understanding and skills on identifying early signs of breast cancer.

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CONFLICTS OF INTEREST

The results of this investigation are in accordance.

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