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The Influence of Health Education (Health Promotion) Breast Self Examination (BSE) Against Behavior of BSE (Knowledge, Attitudes, and Action) Student of Madrasah Aliyah Ar-Raudlatul Ilmiyah Islamic Boarding School Kertosono in Early Detection of Breast Cancer

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ABSTRACT

Background: Breast Self Examination (BSE) behavior in teenagers is essential for the early detection of breast cancer. BSE is a cheap and easy way to detect early. The incidence of breast cancer in Indonesia is significant, and the mortality rate can not be separated due to a lack of awareness. BSE health education is one of the factors that can influence BSE behavior, which includes knowledge, attitudes, and actions. With the formation of BSE behavior, if health workers can immediately check found abnormalities or changes in the breast. Besides and can directly get therapy and, in the long term, can reduce the mortality rate of breast cancer. Purpose: To determine the effect of health education on behavior (knowledge, attitudes, and actions) BSE students of Madrasah Aliyah Islamic Boarding School Ar-Raudlatul Ilmiyah Kertosono. Method: This research is a true-experimental study with the posttest-only control group design. Tools used to collect data knowledge, attitude, and action is a questionnaire. The analysis is only made at the posttest-only. Result: The results of the analysis in the knowledge, attitude, and action questionnaire obtain a Pearson correlation >0.444, p-value < 0,05, and Cronbach alpha value >0.6. Independent T-Test obtained significance values (p <0.05) from each domain that is equal to 0.00 in the knowledge domain, 0.00 in the attitude domain, 0.03 in the action domain, and 0.00 in the total behavior score. Conclusion: The questionnaire is valid and reliable. There is a significant influence of BSE health education on behavior, knowledge, attitudes, and actions

Keywords: Health Education, BSE, Knowledge, Attitude, Action

1. INTRODUCTION

Breast Self Examination (BSE) behavior in adolescents for early detection of breast cancer is still deficient. Though this behavior is essential for the early detection of breast cancer patients because breast cancer is currently not only attacking women aged >30 years but also attacking young women and even teenagers (Sinaga and Ardayani) [1]. In Indonesia, the incidence of breast cancer continues to increase. Increased mortality due to breast cancer can not be separated due to a lack of awareness of BSE behavior so that more than 80% of cases are found in an advanced stage (Dyanti and Suariyani) [2]. BSE, or known as breast self-examination, is one way of early detection that is cheap and easy to do. The purpose of this BSE examination is if found abnormalities or changes in the breast can be immediately checked by health workers (Seftiani) [3] and directly get therapy so that in the long term can reduce the mortality rate of breast cancer (Ministry of Health of the Republic of Indonesia) [4].

Health behavior can be defined as all activities that can be observed or not associated with health maintenance and improvement. This health care includes disease prevention, the protection of diseases, and the healing of diseases. BSE health education is one of the factors that can influence BSE behavior, which includes knowledge, attitudes, and actions. Health promotion through a health education approach can shape health behavior if education is directed according to the target behavioral factors. Behavioral factors are divided into 3, namely predisposing factors, enabling factors, and reinforcing factors. Predisposing factors include knowledge and attitudes, enabling factors to add facilities and infrastructure, and reinforcing elements consist of customs

and culture that are believed by a community environment. So health promotion can shape a person's behavior if it can increase beliefs, knowledge, attitudes, and can provide adequate facilities and infrastructures (Notoatmodjo) [5].

Based on the research mentioned earlier, the researcher wants to combine health education and the media as an effort to establish BSE behavior in the different settings of places, subjects, learning media, length of time, and the ways of evaluating the research.

2. RESEARCH METHODS

This research is a true-experimental study with the posttest-only control group design. The sampling technique in this study was to use total sampling by taking all Madrasah Aliyah students of the Islamic Boarding School Ar-Raudlatul Ilmiyah Kertosono in natural sciences courses who meet the criteria. Then using a simple random sampling technique to make two groups, namely the treatment group and the group control, then obtained a sample of 30 students as a treatment group and 30 students as a control group. The treatment group is the group that is given BSE health education counseling, while the control group is the group that is not given BSE education counseling. The measurement of knowledge, attitude, and action scores are carried out using a questionnaire that will be tested for validity and reliability. All of the collected data will be tested for the normal distribution and homogeneous; the Independent T-Test is performed to find out whether there are significant differences in the knowledge, attitude, and BSE measures between the treatment group and the control group.

3. RESULT

The questionnaire of this study is adapted from Purba's report [6] and Rahma's report [7], then tested their's validity and reliability as a preliminary study on January 17th, 2019.

Validity test of knowledge (20 items) questionnaire, as mentioned table I, that tested to 20 subjects as a preliminary study, and the result is Pearson correlation value is >0,444 Pearson table value. Reliability test of knowledge (20 items) questionnaire, as mentioned table I, that tested to 20 subjects as a preliminary study, the result of Cronbach's Alpha values are over 0,6.

Table I. Validity and Reliability Test of Knowledge Item

	Validity			Reliability
	Pearson Correlation	Sig. (2-tailed)	N	Cronbach's Alpha
Item1	,510*	0,022	20	0,846
Item2	,494*	0,027	20	0,846
Item3	,516*	0,02	20	0,847
Item4	,494*	0,027	20	0,846
Item5	,473*	0,035	20	0,847
Item6	,474*	0,035	20	0,848
Item7	,578**	0,008	20	0,843
Item8	,494*	0,027	20	0,846
Item9	,494*	0,027	20	0,846
Item10	,507*	0,023	20	0,847
Item11	,494*	0,027	20	0,846
Item12	,449*	0,047	20	0,848
Item13	,516*	0,02	20	0,847
Item14	,622**	0,003	20	0,841
Item15	,494*	0,027	20	0,846
Item16	,574**	0,008	20	0,845
Item17	,449*	0,047	20	0,848
Item18	,494*	0,027	20	0,846
Item19	,607**	0,005	20	0,841
Item20	,578**	0,008	20	0,843

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed)

Validity test of attitude (5 items) questionnaire, as mentioned in table II, tested to 20 subjects as a preliminary study, and the result is Pearson correlation value is >0,444 Pearson table value. Reliability test of attitude (5 items) questionnaire, as mentioned in table II, that tested to 20 subjects as a preliminary study, the result of Cronbach's Alpha values are over 0,6.

Table II. Validity and Reliability Test of Attitude Item

	Validity			Reliability
	Pearson Correlation	Sig. (2-tailed)	N	Cronbach's Alpha
Item1	,756**	0	20	0,928
Item2	,868**	0	20	0,891
Item3	,816**	0	20	0,901
Item4	,938**	0	20	0,865
Item5	,938**	0	20	0,865

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table III. Validity and Reliability Test of Action Item

	Validity			Reliability
	Pearson Correlation	Sig. (2-tailed)	N	Cronbach's Alpha
Item1	,518*	0,019	20	0,629
Item2	,496*	0,026	20	0,642
Item3	,519*	0,019	20	0,632
Item4	,467*	0,038	20	0,648
Item5	,467*	0,038	20	0,648
Item6	,508*	0,022	20	0,633
Item7	,506*	0,023	20	0,632
Item8	,471*	0,036	20	0,643
Item9	,557*	0,011	20	0,625

Item10	,489*	0,029	20	0,641
*. Correlation is significant at the 0.05 level (2-tailed).				
**. Correlation is significant at the 0.01 level (2-tailed).				

Validity test of action (10 items) questionnaire, as mentioned at table IIII, tested to 20 subjects as a preliminary study, and the result is Pearson correlation value is >0,444 Pearson table value. Reliability test of action (10 items) questionnaire, as mentioned in table III, that tested to 20 subjects as a preliminary study, the result of Cronbach's Alpha values are over 0,6.

Based on table 4, the age data of the research subjects in the treatment group is 16 years old at the most, amounting to 11 people or 36.7% of the total sample of the treatment group,

whereas in the control group is 17 years old, totaling ten people or 33.3% of the number of control group samples. In the history of menarche, the most menarche age was> 12 years old in both groups, with 18 people or 60% of the total treatment group sample and 14 people or 46.7% of the total control group sample. In the self-examination discipline, discipline obtained treatment group subjects did the most checks on the 7-10 days menstruation totaling 18 people or as much as 60% of the total sample of the treatment group. In contrast, the control group subjects obtained the most checks carried out on more than the 10th day of menstruation of 21 people or 70% of the total control group sample. A family history of cancer found one person or as much as 3.3% of the treatment group, whereas, in the group, there were no subjects who had a family history of cancer. In the history of BSE counseling from the two groups, 100% had never received a history of BSE counseling before.

Table IV. Characteristics of Research Subjects

Characteristics	Treatment Group (T)		Control Group (C)	
	Sum (n)	Percentage (%)	Sum (n)	Percentage (%)
Age				
15 y.o	6	20%	9	30%
16 y.o	11	36.7%	7	23.3%
17 y.o	7	23.3%	10	33.3%
18 y.o	6	20%	4	13.3%
Menarche				
< 12 y.o	4	13.3%	5	16.7%
12 y.o	8	26.7%	11	36.7%
> 12 y.o	18	60%	14	46.7%
BSE examination discipline				
7th-10th day	18	60%	9	30%
> 10th day	12	40%	21	70%
Family history of cancer				
Yes	1	3.3%	-	0%
No	29	96.7%	30	100%
History of BSE counseling				
Ever	0	0%	0	0%
Never	30	100%	30	100%

From table V, the mean score of knowledge scores in the treatment group was 16.47, with a standard deviation value of 1.358, while the mean score for the control group was 13.80, with a standard deviation value of 1.937. In the attitude domain, the mean value in the treatment group was 17.67, with a standard deviation of 1,373, while the mean value in the control group was 15.07, with a standard deviation of 2,490. In the action domain, the mean value in the treatment group was 13.73, with a standard deviation of 1.413, while the mean value in the control group was 12.80, with a standard deviation of 1.955.

Table V also obtained p-value in the knowledge domain of 0.00, attitude of 0.00, and action of 0.03. The p-value in the three domains <0.05, so that it can be concluded that there are significant differences in the mean scores of knowledge, attitudes, and BSE actions between the treatment and control groups. This result shows that there is an effect of BSE health education on knowledge, attitudes, and actions.

Table V. Effects of BSE health education with BSE knowledge, attitudes and actions

Behaviour Domain	Treatment Group (T)			Control Group (C)			P
	Sum (n)	Means	SD	Sum (n)	Means	SD	
Knowledge	30	16.47	1.358	30	13.80	1.937	0.00
Attitude	30	17.67	1.373	30	15.07	2.490	0.00
Action	30	13.73	1.413	30	12.80	1.955	0.03

Table VI. The effect of BSE health education on Total Behavior Scores

Behavior	Treatment Group (T)			Control Group (C)			P
	Sum (n)	M eans	P	Sum (n)	M eans	S D	
Total Behavior Score	30	47.87	1.995	30	41.67	3.827	0.00

From table VI, the mean value of the total score in the treatment group was 47.87, with a standard deviation of 1,995, while the mean total score of the control group was 41.67, with a standard deviation of 3,827. It also obtained a p-value on the total score of 0.00 (p <0.05), so it can be concluded that there is a significant difference in the mean score of total behavior between the treatment and control groups. This result shows that there is an effect of BSE health education on BSE behavior.

4. DISCUSSION

4.1. Validity and Reliability Test of Knowledge, Attitudes, and Actions Questionnaire

The validity and reliability test was carried out on January 17th, 2019, using a subject of 20 Madrasah Aliyah Islamic Boarding School students from Ar-Raudlatul Ilmiyah Kertosono. The results obtained in the knowledge, attitude and action questionnaire have a value of Pearson correlation value > 0.444 (r table value, df 20), p-value < 0,05, and Cronbach alpha value > 0.6. So that it can be concluded that the questionnaire used in this study is valid and reliable, which is in line with Sugiyono [8] and Putrana et al. study [9].

4.2. Analysis of the Effects of BSE Health Education with Levels of BSE Knowledge, Attitudes, and Actions

The knowledge score data in table 5 obtained a value of p 0.00 (p <0.05); this indicates that there were significant differences in the mean scores of BSE knowledge scores between the treatment (16.47) and control groups (13.80). So it can be concluded that there was an influence of BSE health education on BSE knowledge scores. Research that is in line with this research is Seniorita's research [10], which states that the effect of health education about BSE on the knowledge of adolescent girls (treatment groups) in the early detection of breast cancer in Yaspend Paba High School in 2017 which is marked by a value of p 0.00 (p <0.05). This result happened because of the effectiveness of BSE health education delivery. The educational method provided in this study is to use lecture and demonstration methods through video media, power points, posters, and mannequins. The effectiveness of the BSE health education method in this study is supported by Hidayati et al. 's research [11]. They obtained that there is an influence of health education through lecture and demonstration methods on BSE knowledge in Futuhiyyah Mranggen High School students in Demak Regency Demak with a value of p 0.00 (p <0.05). Lecture and demonstration methods through video media, power points, posters, and mannequins are included in audiovisual aids education aids (Maryam) [12] so that it will stimulate the senses of sight and hearing of respondents in capturing information conveyed from BSE health education counseling. According to Maryam [12] states that the more the five senses are used, the more and more clear knowledge is gained.

Average attitude score data in table V obtained a value of p 0.00 (p <0.05); this shows that there is a significant difference in the mean score of BSE attitude scores between the treatment group (17.67) and the control group (15.07). So it can be concluded that there is an influence of BSE health education on BSE attitude scores. Attitude is a person's closed response to a stimulus or object. Manifestations cannot be seen, but can only be interpreted. Attitude is a tendency that comes from the individual to behave in specific patterns due to the establishment and feel of an object (Maryam) [12]. Attitudes can be obtained through the learning process (Novasari et al.) [13], wherein this study, the learning process occurs between the treatment group. The researchers provide BSE health education counseling so that the treatment group will be able to address whether BSE is essential to do or not as an effort to early detection of breast cancer. Another researcher, Seniorita's research [10] also states that there is an influence of health education about BSE towards the attitudes of adolescent girls (treatment groups) in the early detection of breast cancer in Yaspend Paba High School in 2017, which is marked by the value of p 0.00 (p <0.05).

The action score data in table 5 obtained a p-value of 0.03 (p <0.05); this indicates that there were significant differences in the mean scores of BSE action scores between the treatment and control groups. So it can be concluded that there was an influence of BSE health education on BSE measures. Also, the result is supported by the average score of the BSE of the treatment group (13.73) being higher than the control group (12.80). This result happened because in the previous analysis, which showed that the treatment group had a higher score in

knowledge and attitude scores than the control group. So this agrees with Maryam [12], who stated that when someone already knew the stimulus or health object, then held an assessment or opinion towards what is known, the next process is someone will be able to carry out an action what is already known and believed. This study is also in line with Fauzatin's research [14], in which there is the influence of knowledge on the practice of BSE action, where knowledge about good BSE will form the right BSE actions as well.

4.3. Analysis of the Effect of BSE Health Education with a Total Behavior Score

Because the behavioral domain includes knowledge, attitudes, and actions (Notoatmodjo) [5], it is necessary to analyze the total score so that from the results of the analysis, it can be seen whether there is an influence of BSE health education on BSE behavior. The total score is obtained from the sum of the scores of knowledge, attitudes, and actions.

For the treatment groups, the overall performance score (47.87) is higher than the control groups (41.67) shown in table 6. It obtains p-value 0.00 ($p < 0.05$) shows in table 6, suggesting that the mean total BSE behavior score is substantially different. So it can be inferred that BSE behavior is affecting. This result happens because the treatment group has a predisposing factor that includes knowledge and the right attitude and is supported by enabling factors that include a mirror mounted in the bathroom of the treatment group's dormitory by the researcher. This study is in line with the theory of Notoatmodjo [5], which states that health education can shape a person's behavior if it can increase beliefs, knowledge, attitudes and can provide adequate facilities and infrastructures.

The results showed a significant influence of BSE health education on BSE behavior, so it means that BSE health education is essential to give to adolescents (Ali and Hussein) [15]. Based on the above, at the end of the study, the researchers continued to provide BSE health education through posters distributed to the control group.

5. CONCLUSION

There is a significant influence of BSE health education on knowledge, attitudes, and actions, as well as the behavior of Madrasah Aliyah Islamic Boarding School students of Ar-Raudlatul Ilmiyah Kertosono.

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