



## THE EFFECTS OF BREAST CANCER EDUCATIONAL INTERVENTION ON KNOWLEDGE OF FEMALE STUDENTS IN GRADE XI HIGH SCHOOL OF 1 IMOIRI BANTUL, YOGYAKARTA

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### Abstract

**Background:** Breast Self-Examination (BSE) is very important for women and it would be better if they already have knowledge about BSE since adolescence and perform BSE since early period of time. Lack of appropriate and adequate information, especially about breast self-examination, makes female adolescents unable to detect breast cancer early. In fact, breast cancer is one that causes death in women. The efforts to increase knowledge of adolescents is health education. This study aim to identify the effect of health education about BSE on knowledge in eleventh grade students of SMA 1 Imogiri Bantul Yogyakarta.

**Methods:** This research employed a pre-experimental design with a one-group pretest-posttest design. The population was 110 students in eleventh grade. Samples were taken using proportional random sampling with a sample size of 52 female students. Data were collected using a questionnaire and analyzed using Wilcoxon Test.

**Results:** Students had adequate knowledge (71.2%) before being given health education and had good knowledge (100%) after being given health education. There was a significant effect of health education on knowledge in students with a p-value of 0.000 ( $p = 0.000 < 0.05$ ).

**Conclusion:** There is a significant effect of health education about BSE on knowledge in students of SMA 1 Imogiri Bantul Yogyakarta.

## BACKGROUND

Breast cancer is a malignant tumor that grows inside the breast tissues. This cancer begins to grow in the mammary glands, breastmilk ducts, fat tissue, until the connective tissue in the breast. According to the World Health Organization (WHO), 8-9% of women experienced breast cancer. This makes breast cancer the most common type of cancer in women. Every year more than 250,000 new cases of breast cancer are diagnosed in Europe and approximately 175,000 in the US (Ariani, 2015).

Nationally, the prevalence of breast cancer considered the highest cancer prevalence in Indonesia in 2013, up to 0.5%. Riau Islands Province, North Maluku Province and D.I. Yogyakarta has a prevalence of cervical cancer that is 1.5%, while the highest prevalence of breast cancer is in the province of D.I. Yogyakarta, which is 2.4% (Infodatin, 2016). A survey conducted by the Jakarta Breast Health Foundation in 2005 showed 80% of the public did not understand the importance of breast early examination, while only 11% understood and 8.5% did not know. Therefore, understanding of prevention, early diagnosis, curative treatment, and good rehabilitative efforts is needed (Simanjuntak, Yunetta, & Kartikasari, 2014).

Early detection of breast cancer is preferred because the hope of recovery can be achieved if the cancer is still in an early stage. Prevention of breast cancer with a healthy lifestyle is equally important because if there has been cancer, it will cost a lot of money for the treatment. One of the secondary prevention measures is early detection or screening (Priyoto, 2015).

Female adolescents have a low level of knowledge and understanding of breast cancer and how to detect it. Although they know that breast cancer is a serious disease, they only assume that age and genetic factors can cause breast cancer so

they assume that they are not at risk of developing breast cancer (Permatasari, 2013).

Breast Self Examination (BSE) is the development of a woman's concern for the condition of her breasts. This action is equipped with special steps to detect early breast cancer to find out the changes that occur in the breast. One effort that can be done by health workers in giving or increasing public knowledge about breast cancer and early detection is by providing health education. Education influences women's behavior towards health. Health education is one method to increase knowledge about breast cancer that affects women's attitudes and behaviors for early detection of breast cancer (Rosiana & Montairo Elisabeth Onna, 2015).

The purpose of BSE is to detect abnormalities in the breasts in terms of structure, shape or texture, to recognize abnormalities in the breast early on so these abnormalities are not expected to be found at an advanced stage which in turn will require complicated treatment with expensive costs. Besides the changes caused by a disruption in the breast can affect the patient's self-image (Dona, 2017).

Breast self-examination should be done once a month. Women who are menstruating should have an examination on days 5 to 10 of the first day of menstruation when the breasts are relaxed and feel softer (Marmi, 2013).

Based on hospital inpatient data in Yogyakarta 2014, the number of visits of breast cancer patients at the age of 15-24 years are 70 new cases (Bantul), 36 cases (Gunung Kidul), 34 cases (Sleman), and 2 cases (Yogyakarta). While from the Kulon Progo district no data is available.

Based on the results of a preliminary study on class X students at High School of 1 Imogiri Bantul, it was found that research was rarely conducted at the school and had never received health education about reproductive health. From the results of interviews of 10 students in class X of High School of 1 Imogiri Bantul, randomly obtained results of 5

students do not know about BSE, 3 students had heard BSE, and 2 students had attended BSE counseling.

**METHODS**

The design of this study is Pre Experimental to measure and compare the level of knowledge before and after health education is given. The design used in this study is a one-group pretest-posttest design (Sugiyono, 2016).

The population of all XI grade students of High School of 1 Imogiri Bantul is 110 students. The sampling technique used in this study was proportional random sampling, the sample used was 52 respondents.

The inclusion criteria in this study were students who were registered as active students and were present at the time of the study

Exclusion criteria in this study were students who were not present at the time of the study due to illness and students who had been used for preliminary studies.

The analysis used was a test using Wilcoxon Test statistics.

**RESULTS AND DISCUSSION**

After researching at High School of 1 Imogiri Bantul in 2018 on 52 respondents by filling out the questionnaire, the following results were obtained:

The table shows that the Wilcoxon test results in the table above obtained significance value with p-value 0,000 ( $p = 0,000 < 0.05$ ). Then it can be concluded that the test is  $H_a$  accepted and  $H_o$  rejected, which means there is an effect of health education about BSE on the knowledge of female students of grade XI High School of 1 Imogiri Bantul before and after health education.

The results of the study showed that the majority of grade XI students' knowledge before being given health education was in a sufficient category (71.2%).

**Table 1. Knowledge before being given health education to female students of grade xi High School of 1 Imogiri Bantul Yogyakarta**

Knowledge	Frequency (f)	Percentage (%)
Good	13	25.0
Sufficient	37	71.2
Lack	2	3.8
<b>Total</b>	<b>52</b>	<b>100</b>

**Table 2. Knowledge before being given health education to female students of grade xi High School of 1 Imogiri Bantul Yogyakarta**

Knowledge	Frequency (f)	Percentage (%)
Good	52	100
Sufficient	0	0
Lack	0	0
<b>Total</b>	<b>52</b>	<b>100</b>

**Tabel 3. The effects of breast cancer educational intervention on knowledge of female students in grade xi High School of 1 Imogiri Bantul, Yogyakarta**

	N	Median (min-max)	P
Knowledge before health education	52	71 (54-88)	0,000
Knowledge after health education	52	92 (79-100)	

The sufficient knowledge category obtained by the study showed that students do not yet have a deep understanding of BSE. The sufficient knowledge category can be caused because students have never gotten the correct information about BSE. With the development of information technology, students are very easy to get information, especially from the internet. The information they get from the internet is not guaranteed to be true, so it can influence the knowledge of students not to get full information

correctly. Theoretically, it is stated that the more a person gets information about an illness, the knowledge will increase. However, an inaccurate source of information does not guarantee in forming good knowledge (Notoatmodjo, 2012).

Adding information through health education is an effort to convey health messages to the community, groups or individuals so that better health knowledge is expected to have an impact on changing target behavior (Supiyati & Retna, 2012).

The results of this study are most of the students knew after being given health education and referred to as good knowledge category (100%). It means that students have a good understanding of BSE and can correctly answer the questions in the questionnaire.

The treatment (intervention) conducted in this study was health education, the results of the analysis revealed that the knowledge of female students about BSE had increased after attending health education. Knowledge increases from sufficient to good. Health education in this research is focused on material about BSE with the target of health education are female students. Students who have good knowledge about breast self-examination are expected to be able to carry out early breast self-examination. This can occur when students already know about the understanding, goals, implementation time, recommended ways, and how to check, so students can be more concerned about breast health. After knowing about breast health, students are expected to be able to do breast self-examination independently. By doing breast self-examination, the students can find out if there are symptoms or abnormalities in the breast so if there are early symptoms of the emergence of breast cancer, it will immediately be carried out properly and professionally.

Knowledge is the result of observing that occurs after people have sensed a certain object. Sensing to objects occurs through the five senses such as sight, smell, hearing, taste, and touch. So that knowledge is a formation that continues to

grow by someone who is experiencing reorganization at any time due to new understandings (Wawan & Dewi, 2011).

Health education is an activity carried out by spreading messages, instilling beliefs, so that people are not only aware, know and understand, but are also willing and able to do a recommendation related to health. Counseling is given by mastering the material by the target respondent, as in the language used has to be communicative and easy to understand, like opening and closing with greetings. In starting the research, the researcher examines by giving reinforcement in advance how far the respondent understands about BSE, then shows warmth by arousing curiosity towards the respondent so they are willing and able to take counseling seriously (Puji & Ismarwanti, 2015).

This research is in line with the theory that explains health education is one of the factors influencing a person's cognitive abilities. This can be seen from the results of research by an increase between before and after health education (Rahmayani, 2013).

The success of health education in increasing knowledge is supported by the use of appropriate methods. This study used teaching and demonstration methods followed by questions and answers. The method is chosen following the goals of health education which target large groups. The theory suggests that the best method for large groups is the lecture method (Sanjaya, 2011).

The teaching and demonstration method is indeed very appropriate to be applied in explaining BSE because it is easier to show understanding, ideas, and procedures regarding the stages of breast self-examination and show how to carry out BSE following the correct stages, among others in the first step to see breasts at mirror, upright shoulder position and hands at waist. The second stage raises the hand while observing breast changes. The third step is to look at the nipple, check the nipple fluid, and check the nipple if you have a wound or sores.

The fourth step feels the breast by lying down and doing massage and the fifth step examines the breast when standing and sitting (Purba, 2018).

The success of health education is also influenced by the use of appropriate media. Health education in this study used PowerPoint media and leaflets as supporting media in delivering health education materials. This is in line with the existing theory that in the process of health education the presence of the media has sufficient meaning. Because in these activities the unclear material delivered can help by presenting the media as an intermediary. Finally, it can be understood that the media is a tool that can be used as a distributor of messages or information to achieve the desired goals (Djamarah & Aswan, 2006).

Based on the results of the statistical test, it was found that the median value of student knowledge before health education was 71, while the median value of student knowledge after being given health education increased to 92. This means there was an increase of 21 points.

The results showed that there was an increase in knowledge between before and after health education for female students with a good category of 13 respondents (25.0%) to 52 respondents (100.0%), sufficient category of female students totaled 37 (71.2 %) respondents became 0 respondents (0%), and the lack category of female students totaled 2 respondents (3.8%) to 0 respondents (0%). This research is in line with the theory according to Bhakti in (Rahmayani, 2013) argues that health education is one of the factors that influence improving someone's cognitive abilities.

The results of the study are supported by the results of a study from Sutisna, SHR, & Franly (2013) entitled "The Effect of Health Education on Students' Knowledge Levels of Early Detection of Breast Cancer Awareness in High School of 1 Manado" that there was an increase between before and after health education was given, female students with the good category totaled 6

respondents (6.2%) became 75 respondents (81.4%), the sufficient category totaled 30 respondents (30.9%) became 12 respondents (12.4%) and the lack category totaled 61 respondents (62.9%) became 6 respondents (6.2%). The change in knowledge shows the influence of student knowledge before and after being given health education (Sutisna et al., 2013).

The results of the analysis of research data prove that there is an effect of the provision of health education about BSE to the knowledge of grade XI female students at High School of 1 Imogiri Bantul in 2018 ( $p\text{-value} = 0,000 < \alpha = 0.05$ ). An increase in students' knowledge about BSE. The increase in student knowledge was due to the provision of health education. This shows that health education about BSE is an effective way to increase knowledge about BSE that aims to detect breast cancer early in school students. Health education can affect the increase in knowledge because through health education activities carried out there is a transfer of information about BSE from material communicators to students.

The results of this study are in line with Sutisna et al., (2013) study entitled "The Effect of Health Education on Students' Knowledge Levels of Early Detection of Breast Cancer Awareness in High School of 1 Manado". The results of the study using the Wilcoxon test with a  $p\text{-value}$  of ( $0,000 < 0.05$ ) so that  $H_0$  is rejected and  $H_a$  is accepted, which means there is an influence of health education about BSE on student knowledge.

The results of learning can be obtained from direct experience and through artificial objects. The influence of provision of health education about BSE is also influenced by the use of methods in providing material when someone gets material verbally (read and hear), 20% of the material will be remembered, when someone gets the material visually (see pictures, videos), 30% of the material will be remembered, when someone is involved (discussion and presentation) in the giving of the material then 50-70% of the material will be

remembered, and when someone does (role-playing, simulating, doing real / demonstration) in giving the material then 90% of the material will be remembered. This study combines teaching methods and displays material using PowerPoints. Demonstrations were also conducted using breast phantom and question and answer with researchers, and giving leaflets at the end of health education (Asrurol, 2016; Fitriana & Sukismanto, 2019).

Conclusions in this study, the researchers provided health education by combining teaching methods using PowerPoints and giving leaflets and demonstrations using phantom breasts to increase the knowledge of students about adolescent reproductive health, especially BSE.

## CONCLUSION

The results of this study conclude that the knowledge of female students before health education was mostly in the sufficient category (71.2%), female students' knowledge after being given health education in a good category (100%) and there was a significant effect of health education about breast cancer self-examination on knowledge of female students in grade XI High School of 1 Imogiri Bantul in 2018 with a p-value of 0,000 ( $0,000 < 0.05$ ). Therefore reproductive health education can be included in local content taught in schools to form attitudes and behaviors so that students can live healthily. Whereas the next researcher should examine the factors that affect knowledge including the environment, social culture, and information.

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