



Comparison of health education with videos and leaflets on the knowledge of young women about early detection of breast cancer In SMP Negeri 15 Bandung

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ABSTRAK

Latar Belakang: Kanker payudara adalah tumor ganas yang tumbuh di dalam jaringan payudara dan merupakan penyakit kanker terbanyak diderita oleh perempuan di Indonesia, dengan angka kejadian sebesar 42,1 per 100.000 penduduk dan rata-rata kematian 17 per 100.000 penduduk. Terjadi peningkatan insiden kanker payudara pada perempuan saat remaja dan dewasa muda diakibatkan beberapa faktor seperti paritas di usia muda, riwayat keluarga, mutasi gen, dan faktor gaya hidup yang buruk. Deteksi dini kanker payudara melalui edukasi faktor penyebab dan cara mencegah kanker payudara serta teknik pemeriksaan payudara sendiri akan sangat bermanfaat untuk mengurangi insidensi.

Tujuan: Tujuan penelitian ini adalah untuk mengetahui perbandingan pendidikan kesehatan deteksi dini kanker payudara dengan media video dan leaflet terhadap pengetahuan remaja putri tentang deteksi dini kanker payudara.

Metode: Penelitian ini menggunakan quasi experiment dengan two control group design. Pengambilan sampel menggunakan teknik consecutive sampling. Penelitian dilaksanakan selama 7 hari pada bulan Desember 2019 pada remaja putri di SMP Negeri 15 Bandung dengan subjek penelitian masing-masing kelompok sebanyak 40 orang. Pengumpulan data dilakukan dengan menggunakan kuesioer. Kelompok experiment diberikan video dan kelompok control diberikan leaflet. Analisis data bivariate menggunakan uji paired t-test dan uji non-paired t-test.

Hasil: Penelitian menunjukkan terdapat peningkatan pengetahuan sebelum dan sesudah diberikan video ($p=0,000$) dan leaflet ($p=0,003$) dengan perbedaan yang signifikan pada remaja putri yang diberikan video dibandingkan dengan yang diberikan leaflet ($p=0,000$).

Kesimpulan: Terdapat perbedaan pendidikan kesehatan dengan video dan leaflet terhadap pengetahuan remaja putri tentang deteksi dini kanker payudara.

KATA KUNCI: deteksi dini kanker payudara; leaflet; pendidikan kesehatan; pengetahuan remaja putri; video

ABSTRACT

Background: Breast cancer is a malignant tumor that grows in the breast tissue and is the most common cancer disease affecting women in Indonesia with an incidence of 42.1 per 100.000 population and an average death rate of 17 per 100.000 population. The increasing incidence of breast cancer in women as adolescents and young adults is due to several factors such as parity at a young age, family history, gene mutations, and poor lifestyle factors. Early detection of breast cancer through education on causative factors and how to prevent breast cancer and breast self-examination technique will be very useful to reduce the incidence.

Objectives: This study aimed to determine the comparison of breast cancer early detection health education with video and leaflets on the knowledge of young women about early detection of breast cancer.

Methods: This study used a quasi experiment method with two control group design. Samples collected with consecutive sampling techniques. This study conducted for 7 days in December 2019 on young women at SMP Negeri 15 Bandung with 40 subjects in each group. The technique used to collect the data is questionnaire. The experimental group is given with Video and the control group is given with Leaflet. The bivariate data analysis used Paired T-Test and Non-paired T-test.

Results: The results of this study showed that there was an increase in the knowledge before and after being given video ($p = 0.000$) and leaflet ($0,003$) with significant difference in young women who were given video compared to those given leaflets ($p=0,000$).

Conclusions: there were differences in health education with videos and leaflets on the knowledge of young women about early detection of breast cancer.

KEYWORD: early detection of breast cancer; leaflet; health education; knowledge of young women; video

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INTRODUCTION

According to *Globocan*, an International Agency Research on Cancer (IARC) in 2018 there are 18.078.957 new cancer cases and 9.555.027 deaths from cancer around worldwide. There are 18.1 million cases of cancer and the total amount of death from cancer is nearly 9.6 million people in 2018. Breast cancer has a new highest percentage of new cases at 24.2% and the death rate is 15.0% on women throughout worldwide (1). The Ministry of Health of the Indonesia Republic stated, the highest number incidence of cancer in Indonesia for women is breast cancer, which is 42.1 per 100.000 of population, with the average of death rate at 17 per 100.000 population (2). According to data from the Health Profile of West Java Province in 2016, breast cancer sufferers are found 912 people, which 0.013% are targeting women aged 30-50 years or 1.42% of the whole number examined (3).

Breast cancer is a malignant tumor that grows in the breast tissue (4). Globally, breast cancer is a cancer that often diagnosed in women regardless of age (5). The increase incidence

of breast cancer in women as adolescents and young adult is due to the risk factors such as parity at young age, family history of breast cancer, gene mutations, and unhealthy lifestyle like smoking, drink alcohol, fast food consumption, and rarely or lack of exercising (4,6). An effective way to detect breast cancer early is by providing education about breast cancer itself, breast cancer prevention, and breast self-examination techniques (BSE).

Breast self-examination (BSE) is early detection of abnormal cells in breast that grow as a lump (7). Breast cancer prevention and breast cancer early detection can be done as early as possible at teenager (8). Teens are an ideal time to build healthy life habits, such as avoiding tobaccos and regular exercising, that helps to reduce breast cancer risk in the future (9). Breast self-examination (BSE) starts from adolescents and continue to be a routine so that early stage of breast cancer can be detected early. Young women need to do BSE soon after they have breast growth and menstruation as a puberty sign (8). Research of Nurul Aeni in 2018 revealed that there are still many adolescents

who don't know about BSE and still not getting any information from public health institution nor the school itself (10).

One of the risk factors for breast cancer is early menarche (<12 years). Study by Eka T stated that average women who get breast cancer at the age of menarche is 11.5 years old (11). Women who experience early menarche have a higher increase estrogen hormone than the normal menarche one (12-16 years), therefore this would be increasing the breast cancer risk (12). The average age of menarche is commonly 12.4 years old. Based on Indonesian Demographic and Health Survey in 2012, the age of menarche for young women in Indonesia is in the age range of 12 – 15 years (11).

One way to enhance the knowledge of young women about early breast cancer detection is by providing a health education to raise awareness of breast cancer (13). Gaining knowledge about early detection of breast cancer and how to do it can also increase the possibility to doing it by routine so that breast cancer from an early stage can be detected (14,15). Some media that can be used for a health education are namely, audio visual media, which are video and visual media namely leaflet (16). The research findings of Alini revealed that there were differences of young women knowledge about BSE after being given promotional health by using audio visual $p=0.003$ and leaflets $p=0.004$ (17).

The early prevention and detection of breast cancer can be carried out as early as possible when young women are in puberty, marked by menarche and breast growth. Thus, this research is conducted on young women in grade of 7 of Junior High School, who commonly the age range is between 13-15 years. According to a preliminary study by researcher at SMP Negeri 15 Bandung to the teachers in public relations department, revealed that SMP Negeri 15 Bandung had never received any health education about early detecting breast cancer

and there were no materials of breast cancer and early detection of it in the school curriculum.

This study aimed to determine the comparison of breast cancer early detection health education with video and leaflets on the knowledge of young women about early detection of breast cancer. Based on explanation above, the researcher interest in conducting a research entitled "Comparison Health Education by using DEDIKARA videos and leaflets toward Knowledge of Young Women in early Detecting Breast Cancer at Junior High School State of 15 Bandung.

MATERIALS AND METHODS

This research conducts at SMP Negeri 15 Bandung (Junior High School) starts from December 19, 2019 until December 18, 2019. This research use quasi experiment method and two control group design (18). Research divide into two group who will be given a health education by using a different media. The experiment group are given videos and the control group will be given leaflets. Sampling technique in this study is consecutive sampling with the total sample used are 80 people and divided into 40 people to each group. Sample will be selected according to inclusion criteria, young women who are in 7 grade in SMP Negeri 15 Bandung and young women who are willingly to be respondent. The research data collected by questionnaire that had been tested for validity. The questionnaire are given at pre-test and post-test. Data analysis in this research use univariate analysis which are distribution of frequency table and bivariate analysis with paired t-test statistic and non-paired t-test.

RESULTS AND DISCUSSION

The Characteristic of Young Women

Tabel 1. showed young women aged 10-13 years in experiment group at 100% and the control group at 90%. At experiment group, who

Tabel 1. Frekuensi Distribution of Characteristic of Young Women

Characteristic	Group			
	Experiment		Control	
	(f)	(%)	(f)	(%)
Age Range				
10-13 years	40	100	36	90,0
14-16 years	0	0	4	10,0
Source information of breast cancer early detection				
Family	5	12,5	5	12,5
Media	5	12,5	3	7,5
Health	1	2,5	2	5,0
Friend	3	7,5	0	0
Haven't get information yet	26	65,0	30	75,0
Total	40	100%	40	100%

admit have never received information of breast cancer early detection is 65%, and those who ever received from their family and mass media is 12.5%, and the control group who have never received information of breast cancer early detection is 75% and who has ever received information mostly from their family is 12.5%.

Knowledge of Young Women

Tabel 2. showed that in experimental group has mean value 58.68 by the standard deviation is 13.315 at pre-test and post-test to 88.23 with the standard deviation 9.253. And in control group has mean amount at pre-test 56.93 with a standard deviation is 12.410 and to be 63.00 with standard deviation is 12.794. The median value at experimental group is 57.00 by the value range of 37-83 become 87.00 with has value range at 67-100. In control group the median value is 53.00 by the value range is 37-80 at pre-test and become 63.00 and has value range of 33-90. This result of paired t-test analysis revealed

Tabel 2. Knowledge of Young Women in Experimental and Control Groups

Knowledge	N	Mean ± SD	Median (min-max)	P-Value*
Experiment				
Pre-Test	40	58,68 ± 13,315	57,00 (37-83)	0,000
Post-Test	40	88,23 ± 9,253	87,00 (67-100)	
Control				
Pre-test	40	56,93 ± 12,410	53,00 (37-80)	0,003
Post-test	40	63,00 ± 12,794	63,00 (33-90)	

*Paired T-test

that p-value 0.000 for experiment group and for control group p-value is 0.003. It indicates that there was difference in young women knowledge before and after given a health education using videos and leaflets.

Comparison Health Education through Video and Leaflet on Knowledge

Tabel 3. Comparison of Video and Leaflet DEDIKARA on Young Women Knowledge about Early Detection of Breast Cancer

Knowledge	Group		P-Value*
	Experiment	Control	
Post-test			
Mean ± SD	88,23 ± 9,253	63,00 ± 12,794	0,000
Median (min-max)	87,00 (67-100)	63,00 (33-90)	

*Non-paired T-test

Tabel 3. showed the result of non-paired t-test analysis the p-value is 0.000 (p<0.05) and it can be seen that there are differences in young women knowledge after being given health education both using videos and leaflets DEDIKARA on young women knowledge about early detection of breast cancer.

DISCUSSION

Based on table 1. can be seen that mostly young women aged 10-13 years old. Adolescents age 10-13 years old belong to early adolescence and at that age, adolescents will experience puberty or changes in physical maturity which are body form and hormonal changes. The body changes on young women marked in psychological changes, rapid physical changes,

menarche or first menstruation, the appearance of secondary sex change characteristics, such as breast growth, enlarge hips, growth of fine hair in the armpit and pubic area (19,20). According to Pearce and Proverawati, menarche can be defined as a beginning menstruation for young women when puberty, which it can indicate that girl has entered the sexual organ maturity stage in their body (21).

One of the risk factor for breast cancer is early menarche (<12 years). That findings is in line with the research of Eka T, that revealed the average women experiencing breast cancer is at the age of menarche is 11.5 years old (11). Women who experience early menarche, also have an increasing estrogen hormone higher than to normal menarche category (12-16 years) thus it will increase the risk of breast cancer (12). The average of menarche age, generally is 12.4 years old. Menarche can occur earlier at 9-10 years old or at latest 17 years old. The result of Indonesian Demographic and Health Survey in 2012, that 23% of women aged 12 and 7% aged 10-11 years have already experienced menarche, and 89% menarche age of Indonesian young women are in the range of 12-15 years old (11).

In this study also revealed that mostly women admit they have not received any information in detecting early breast cancer. According to Maulina, that information is a source of knowledge. People will enhance their knowledge if they get a lot of information (22). In this research, indicate that the environment around young women like family or relatives, mass media, or health workers haven't fully provided an information about breast cancer and how to detect it early. So, it makes young women have a negative attitude and assume it less important. In line to Shahrabakis' stated that the less of adequate knowledge and skill makes women unable in detecting early breast cancer and lead to those women ignore it (23).

Based on table 2. It conclude that there is difference in mean value before and after treatment for the two of groups ($p < 0.05$). Although both of groups have a significant result, but if we take a look at mean value there is a greater enhancement for the experiment group which has at 58.68 to be 88.23, compared to the control group which has value at 56.93 to be 63.00. In this research findings, also known the value range (min-max) for those two groups, the result stated a diversity in data at those two groups, so that there were an increase and decrease between highest to the lowest value (minimum) at both experimental and control groups (24).

Similarly, in line with this research, a research conducted by Sari W, showed an enhancement of knowledge before and after given intervention both videos and leaflets with the average value of knowledge at those two groups have a significant value 0.000 ($p < 0.005$) (23). The difference of knowledge in experimental group is in line with the result of research conducted by Prabawati, which showed that there was an effect of education by video towards knowledge, which s p-value 0.003 ($p < 0.05$) (25). According to Tiara's in SMK YMJ Ciputat stated on the hypotheses test result that $p < 0.05$ so that there was an effect of health education to knowledge of young women about BSE by using videos, the value of $p = 0.000$ (26).

Knowledge is information or everything that people knows about a certain object through the human senses, namely, sight, hearing, smell, taste, and touch (27). In this study, knowledge is an information about early detection of breast cancer through hearing and sight sensing provided by using videos and leaflets. According to Cone of Experiences Edgar Dale describes a person information acquisition if it involves 30% of visual sense, and if only 20% of hearing senses (28). This shows that the information acquisition into young women memory is greater in providing

audio-visual media by 50% because it involves the visual and hearing senses compared to young women who receive information only by leaflets which is 30% because it only involves the visual sense. According to the theory, videos are include to electronic education media which have some advantages, participate many five sense so it is easier to be understood, it more attractive because it has sound and moving images, face to face, controllable presentation, larger range, and as an instrument of discussion and it can be repeated, so that videos can be used effectively for enhancing knowledge (29).

The level of knowledge according to Bloom are knowing, remembering, understanding, applying, analyzing, evaluating, and creating (30). In this study, young women through phase re-remembering information about early detection of breast cancer which had known previously and can be measured by a pre-test. The next level ahead is understanding which young women explain and interpret the information about early detection of breast cancer correctly and measured through a post-test.

According to Keeley in Sprenger, the length of intervention interval will affect the strength of retention. He stated that 54% of material will be remembered after one day of getting information, 35% after 7 days, 21% after 14 days, and 8% after 21 days (31). This case shows that young women who have already received information about early detection of breast cancer through video or leaflets after 7 days can recall those information by 35%. This is in line with the research findings which showed young women have an increasing knowledge after given the videos and leaflets about early detection of breast cancer.

In this study based on table 3, two groups were given treatment as the experimental group being given a health education videos about DEDIKARA (early detection of breast cancer) and the control group are being given through the

leaflet ones. Videos is a media that provides such a displaying of moving images which formed of various images following the movement flows which has determined at each additional time occurs. Video is an effective medium to help the learning process, whether for mass learning, individual learning, or groups learning (32,33). Leaflets are a printed media consisting of words, images, and colours that prioritize visual messages.

This research findings in line with Wulansari in 2020, revealed that there were differences on young women knowledge after being given the health promotion using videos and leaflets toward young women knowledge about self-defences from violence p value $p=0.049$ ($p<0.05$) (18). Another study by Alini stated that there was difference on knowledge after being given health promotion using audio-visual media ($p=0.003$) and leaflets ($p=0.004$), which meant there was a difference between audio visual and leaflets on young women knowledge about BSE (17). In 2016 Herawati's research revealed that there were differences in BSE skills at students who given health promotions using leaflets compared to those using videos, moreover the average value of student who use videos is higher (34).

The researcher has not found studies who attempt to compare health education using videos and leaflets about early detection of breast cancer on young women. This study provide information about breast cancer, how to prevent the breast cancer that can be applied since adolescence and how to detect early breast cancer through breast self-examination (BSE) carried out on 7th grade girls, who mostly aged 10-13 years old or entering in early adolescence and at that age, young women get puberty, including body and hormonal changes, which indicated by young women experiencing menarche or first menstruation, features secondary sex changes such as breast growth. Providing knowledge about prevention and early detection of breast

cancer is carried out as early as possible in early adolescence so it will increase the awareness of breast cancer and increase the possibility of early detection of breast cancer through breast self-examination (BSE).

Media is an effort to convey messages or information to be conveyed to target or audience thus it can enhance knowledge and finally can change behaviour into positive vibes or supportive (35). Video is one of effectively media in providing health education because it considered to make it easier to receive messages to targets and this video have advantages, namely a conveying information that involves five senses, easier to be understood, more attractive because it have sounds and moving images, accessible to community, and its presentation can be controlled as needed so that it can increase knowledge.

Increasing the value of knowledge in experimental and control groups prove that by giving videos and leaflets can enhance the knowledge of young women about early detection of breast cancer, but giving the DEDIKARA videos is greater than giving leaflets so it obvious that video is more effective compare to those leaflets. This is in accordance to Edgar Dale's experience pyramid theory that a person learns more than 50% of what he has seen and heard. Dale stated that the effectiveness of media can be seen from the extent in increasing knowledge (28).

CONCLUSION AND RECOMMENDATION

Based on this research findings, it showed that there was an increasing in knowledge before and after being given video ($p=0.000$) and leaflet ($p=0.003$) by significant difference between young women who were given videos compared to those given leaflets ($p=0.000$). Therefore, there was difference in health education using videos and leaflets toward young women knowledge about early breast cancer detection. Providing health education by using videos and

leaflets effects on increasing knowledge of young women, but the researchers highly recommend in using videos, due to the research findings that showed effect of using videos is more significant than the leaflets.

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