KAPALAMADA: Jurnal Multidisipliner

http://azramedia-indonesia.azramediaindonesia.com/index.php/kapalamada/index
DOI: https://doi.org/10.62668/kapalamada.v5i01.2290
Email : info@azramediaindonesia.com

Open Access

EFFECT OF BREAST SELF-EXAMINATION EDUCATION ON ADOLESCENTS' KNOWLEDGE AND MOTIVATION

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Info Article
Received :
04 Januari 2026
Revised :
01 Februari 2026
Accepted :
01 Maret 2026
Publication :
31 Maret 2026

Keywords:
SADARI; Breast cancer; Adolescents; Knowledge; Motivation; Health Education.

Kata Kunci:
SADARI; Kanker payudara; Remaja; Pengetahuan; Motivasi; Pendidikan kesehatan.

Abstract: *Breast cancer is a significant global and national health problem, including among adolescents. Early detection through Breast Self-Examination (BSE) is highly recommended to improve early diagnosis and prevent more serious complications. This study aimed to analyze the effect of BSE education on the knowledge and motivation of female students at SMP Negeri 11 Jambi City. This study used a quantitative pre-experimental design with a one-group pretest-posttest approach. The sample consisted of 40 students selected using stratified sampling technique. Data were collected using validated and reliable questionnaires and analyzed using the Wilcoxon Signed-Rank Test. The results showed a significant increase in knowledge (p = 0.000) and motivation (p = 0.000) after BSE education was provided. These findings indicate that BSE education is effective in improving students' knowledge and motivation. Therefore, it can support increased awareness and early detection behavior of breast cancer among adolescents, ultimately contributing to better preventive health efforts in this population.*

Abstrak: Kanker payudara merupakan salah satu masalah kesehatan global dan nasional yang signifikan, termasuk pada kelompok remaja. Upaya deteksi dini melalui Pemeriksaan Payudara Sendiri (BSE) sangat direkomendasikan untuk meningkatkan kemungkinan diagnosis dini dan pencegahan komplikasi yang lebih serius. Penelitian ini bertujuan untuk menganalisis pengaruh pendidikan BSE terhadap pengetahuan dan motivasi siswa perempuan di SMP Negeri 11 Kota Jambi. Penelitian ini menggunakan desain kuantitatif pra-eksperimental dengan pendekatan one group pretest-posttest. Sampel penelitian terdiri dari 40 siswa yang dipilih menggunakan teknik stratified sampling. Data dikumpulkan menggunakan kuesioner yang telah diuji validitas dan reliabilitasnya, kemudian dianalisis menggunakan Uji Peringkat Bertanda Wilcoxon. Hasil penelitian menunjukkan adanya peningkatan yang signifikan pada pengetahuan (p = 0,000) dan motivasi (p = 0,000) setelah diberikan pendidikan BSE. Temuan ini menunjukkan bahwa pendidikan BSE efektif dalam meningkatkan pengetahuan dan motivasi siswa, sehingga dapat mendukung peningkatan kesadaran dan perilaku deteksi dini kanker payudara di kalangan remaja.

INTRODUCTION

Adolescence is the transition period from childhood to adulthood, beginning with puberty. During this stage, individuals experience rapid changes in various areas of development, including both physical and psychological development. Physically, these changes are evident through increases in height and weight, as well as social maturity (Hamidah & Rizal, 2022). During adolescence, the reproductive organs begin to mature due to increased levels of two hormones, estrogen and progesterone, which play a significant role in puberty. Physiologically, these hormones stimulate the growth of the uterus and ovaries, as well as the enlargement and maturation of the mammary glands. Changes in the breasts include the formation of glandular tissue and an increase in size, a sign of sexual maturity (Nursyahrani et al., 2024). However, hormonal fluctuations during this period can also affect breast tissue and potentially increase the risk of breast abnormalities or cancer (Berliere et al., 2023).

Cancer is a non-communicable disease characterized by the uncontrolled growth of abnormal cells. These cells can damage surrounding tissue and spread to other organs through metastasis. The disease can affect almost any area of the body and often causes serious disruption to organ function. Furthermore, depending on the type, cancer can progress gradually or aggressively, making early detection and appropriate treatment crucial to increase the chances of recovery (Hero, 2021). Breast cancer is a type of cancer that occurs when malignant cells grow uncontrollably in breast tissue, usually in the milk ducts or lobules (milk-producing glands). Cancer cells can form tumors that can be physically felt or detected through imaging tests such as mammography. Although it most often affects women, this cancer can also occur in men, although very rarely (Cancer, 2025).

In low- and middle-income countries, many women with breast cancer seek treatment or are diagnosed only when the disease is already in an advanced stage (locally advanced or even metastatic). In such situations, promoting early diagnosis is a crucial first step before widespread breast cancer screening can be implemented in the community. Early diagnosis will increase the chances of cure for all breast cancer patients, given that even in countries with the best screening programs, less than half of breast cancer cases are detected through screening (Ginsburg et al., 2020). Delays in diagnosis in women who already have symptoms are still very high, often due to barriers to access to health facilities, low awareness of early symptoms, and slow referral

processes which cause most new cases to be discovered at an advanced stage (Nnaji et al., 2022).

Globally, breast cancer has the second-highest number of cases after lung cancer. According to 2022 WHO data, breast cancer accounts for approximately 11.6% of cases annually. The number of new breast cancer cases reported annually reaches 2.3 million (World Health Organization, 2023). From these cases, the death toll is estimated to reach 670 thousand people in 2022 (World Health Organization, 2024). In Indonesia, breast cancer was recorded in Globocan in 2022 as many as 68,858 cases (16.6%) of a total of 396,914 new cases, with the death rate reaching around 22 thousand people in breast cancer cases in Indonesia (Rosyidah, 2023). In 2022, national data showed 408,661 new cancer cases and 242,099 deaths, with breast cancer being the most common type of cancer. The Indonesian Breast Cancer Foundation stated that there is a trend of decreasing age at diagnosis for breast cancer in Indonesia, particularly among adolescents, with cases even being found in 15-year-olds (Jitasari Tarigan Sibero □, Afrahul Padilah Siregar, 2021). 4,354 cases of breast cancer in Indonesia in the age group of 10-24 years occurred in 2020, this shows that the incidence of breast cancer in young women in Indonesia is quite high (Aprianti & Diniyah, 2025). Jambi Province has a breast cancer prevalence of 1.5%, which is estimated to cover around 4,995 people of the total population of the province (Mustikasari et al., 2021). Meanwhile, according to data from Raden Mattaher Regional Hospital in Jambi in 2024, there were 261 cases of breast cancer. This data indicates that breast cancer remains a serious health problem, both nationally and regionally, particularly in Jambi Province.

The high incidence of breast cancer in Indonesia makes this disease a government treatment priority. Approximately 43% of cancer cases can be prevented if patients undergo regular early detection and avoid risk factors. (Rokom, 2022). The Indonesian Ministry of Health recommends early detection of breast cancer starting when women experience their first menstruation, or around age 12, to prevent the risk of breast cancer. The Indonesian government has long promoted programs such as early detection of breast cancer through Breast Self-Examination (SADARI) for women who have been trying to prevent cancer. SADARI should be performed monthly, ideally on the 7th to 10th day after the first day of menstruation. During this period, the breasts are usually not tight or tender, making it easier to detect suspicious changes or lumps. This habit is recommended to begin when women experience their first menstruation to prevent the risk of breast cancer early. By performing regular breast self-examinations, women can better and more

quickly recognize the normal condition of their breasts and become more aware of any changes that require consultation with a doctor (Kemenkes RI, 2024).

Breast cancer is increasingly common, especially in adolescents. According to the WHO, breast cancer risk factors include non-modifiable factors such as female gender, age, family/genetic history, and early menarche and late menopause. They can also be modified, such as obesity, physical inactivity, alcohol consumption, long-term hormone use, and radiation exposure (Organization, 2025). Of all these factors, genetics is one of the most influential causes of cancer in adolescents. Those with a family history of cancer, such as a mother, grandmother, or older sibling, are more likely to have a risk factor. The highest incidence of breast cancer occurs in women aged 40-49, but currently, women aged 15 to 20 are more likely to develop breast cancer. The American Cancer Society also recommends early breast cancer screening for women aged 14 to 20 (Istiqomah et al., 2023).

A 15-year-old girl from Chagai District, Balochistan, Pakistan, presented to a village clinic with a lump in her right breast that she had been feeling for six months. After minor surgery, tests revealed a malignant, triple-negative metaplastic breast cancer with a BRCA1 gene mutation as a hereditary factor. Because she was young and single, she chose to preserve her breasts with close monitoring and regular chemotherapy. This case illustrates how cultural stigma can hinder early screening despite a genetic history of cancer (Vohra et al., 2022)**.** Increasing knowledge and recognition of the importance of SADARI can be done through various educational efforts, one of which is counseling (Rahmadini et al., 2022). Based on research by Annisa, Rury & Tiara (2022) at MTs Antariksa, Cidahu District, Sukabumi Regency, it was shown that the research showed that counseling regarding Breast Self-Examination (SADARI) was very effective in increasing female students' knowledge regarding early detection of Breast Cancer (Wijayanti et al., 2020). This study focuses on the effectiveness of counseling in increasing female students' knowledge about breast cancer and BSE. The study also shows that increased knowledge through counseling influences BSE behavior. However, increased knowledge is not always accompanied by strong motivation to perform BSE regularly. Therefore, this study emphasizes a different focus by examining not only knowledge but also the motivation of female junior high school students towards BSE as an effort to detect breast cancer early from early adolescence.

Based on the results of research by Ratna Jelita Sari and Sulastri (2022) at SMPN 13 Tanjung Jabung Timur, the motivation of female adolescents towards early breast

cancer detection through BSE is still largely low (Sari, 2022). Breast self-examination education is also needed to increase adolescent motivation in early breast cancer detection. For example, a study conducted by Nizma, Diyan, and Neta (2023) found that after BSE counseling, 38 respondents (100%) demonstrated strong motivation. Research shows that actions can influence knowledge, understanding, and motivate individuals to perform BSE. According to the study, considering the environment at SMP Negeri 1 Kras, minimal information can lead to a lack of understanding, interest, and motivation for students to perform BSE (Kusumawaty et al., 2021).

Jambi City is the capital of Jambi Province, which has 74 Junior High Schools (SMP). One of the Junior High Schools in Jambi City is SMP Negeri 11 Jambi City. This school is one of the schools with the second largest number of female students, namely 561 people according to data from the Jambi City Education Office, with the first being SMP Negeri 006 Jambi City with 642 female students and in third place is SMP Negeri 004 with 536 female students. The selection of SMP Negeri 11 Jambi City as the research location was based on academic and practical considerations. This school is one of the public junior high schools with a relatively large number of female students in Jambi City, thus representing a sufficient population of adolescent girls for health education interventions. The results of a preliminary study on 12 8th grade female students of SMPN 11 showed that of the 12 female students interviewed, all of them did not know about breast self-examination (SADARI). However, it was found that three female students had knowledge about breast cancer, although their knowledge was still general. Based on the description above, the researchers were interested in conducting research on the effect of breast self-examination (BSE) education on the knowledge and motivation of female students at SMP Negeri 11 in Jambi City.

METHOD

This study used a quantitative method with a pre-experimental One Group Pre-Post Test Design without a control group. The study was conducted at SMP Negeri 11 Jambi City starting in January 2026 with a population of 337 female students in grades VII and VIII in the 2025/2026 academic year. The sample was determined using the Slovin formula of 40 female students (20 in grade VII and 20 in grade VIII) with a stratified sampling technique. Data collection used a knowledge and motivation questionnaire whose validity was tested using the Pearson Product Moment test and reliability using Cronbach's Alpha (>0.6). Primary data were obtained from students filling out

questionnaires, while secondary data came from the school and the Jambi City Education Office.

The data obtained were processed through several stages, namely editing, coding, tabulation, entry, and cleaning. Editing was carried out to check the completeness and accuracy of the data. Coding assigned numeric codes to respondents' answers for easy analysis using SPSS; the knowledge variable was scored as correct = 1 and incorrect = 0, while motivation used a scale of 1–4 with adjustments for negative questions. The data were then tabulated and entered into Microsoft Excel and analyzed using SPSS. After that, cleaning was performed to ensure there were no data errors.

Data analysis included univariate analysis to describe knowledge and motivation before and after BSE education, and bivariate analysis using the Wilcoxon Signed Rank Test with a significance level of $\alpha = 0.05$. This study has obtained ethical approval from the Faculty of Medicine and Health Sciences, University of Jambi (No. 4870/UN21.8/PT.01.04/2025).

RESULTS AND DISCUSSION

Results

Respondent Characteristic

Table 1. Frequency Distribution of Respondent Characteristics

Respondent Characteristics	Category	Frequency (N=40)	%
Age	12 years	12	30
	13 years	24	60
	14 years	4	10
Age at First Menstruation	9 years	2	5
	10 years	4	10
	11 years	17	42.5
	12 years	15	37.5
	13 years	2	5
Grade	Grade 7	20	50
	Grade 8	20	50

Based on Table 1, the majority of respondents were 13 years old (24) and 60%, respectively. Twelve respondents (30%) were 12 years old, while four (10%) were 14 years old. This data indicates that the majority of respondents were in early adolescence, a time when significant physical changes and reproductive organ development occur. Based on age at first menstruation (menarche), the majority of respondents experienced menarche at age 11 (17) and 42.5%, followed by 12 years old (15).

Four respondents experienced menarche at age 10 (10%), while two respondents each experienced menarche at age 9 and 13 (5%). This indicates that the majority of

respondents had entered puberty, which is marked by the onset of menstruation. Based on grade level, there were 20 respondents in grades VII and VIII (50%) each. This indicates a balanced distribution of respondents by grade in this study.

Univariate Analysis

Table 2. Frequency Distribution of Respondents Based on Variables

Variable	Category	Frequency (F)	%
Knowledge (Pre)	Good	9	37.5
	Fair	16	40
	Poor	15	22.5
Motivation (Pre)	Strong/High	2	7.5
	Moderate	35	87.5
	Weak/Low	3	5
Knowledge (Post)	Good	32	80
	Fair	7	17.5
	Poor	1	2.5
Motivation (Post)	Strong/High	34	85
	Moderate	6	15
	Weak/Low	0	0

Based on Table 2, it is known that before the intervention (pre-test), the majority of respondents were in the sufficient knowledge category (16 respondents (40%), followed by 15 (37.5%), and 9 (22.5%). Therefore, it can be concluded that before health education, respondents' knowledge levels were still dominated by the sufficient and poor categories. Furthermore, the majority of respondents were in the moderate motivation category (35 respondents (87.5%), followed by 3 (7.5%), and 2 (5%). Therefore, it can be concluded that before health education, respondents' motivation was predominantly in the moderate category.

After the intervention (post-test), the majority of respondents were in the good category (32 respondents (80%), followed by 7 (17.5%), and 1 (2.5%) in the poor category. Therefore, it can be concluded that after health education, respondents' knowledge levels were predominantly in the good category. Furthermore, the majority of respondents remained in the moderate category (34 people (85%), but there was an increase in the strong category to 6 people (15%), and there were no more respondents in the weak category (0%). Thus, it can be concluded that after receiving health education, there was an increase in respondent motivation, indicated by an increase in the strong category and the disappearance of the weak category.

Bivariate Analysis

Table 3. Normality Test Result

Variable	Shapiro-Wilk Statistic	Df	Sig.
Knowledge Before Intervention	0.959	40	0.154
Knowledge After Intervention	0.904	40	0.002
Motivation Before Intervention	0.945	40	0.052
Motivation After Intervention	0.957	40	0.131

Based on Table 3 regarding the results of the normality test using the Shapiro-Wilk test on the knowledge and motivation variables before and after the intervention, it is known that the knowledge variable before the intervention obtained a significance value (Sig.) of 0.154 ($p>0.05$) which means the data is normally distributed. Meanwhile, knowledge after the intervention has a significance value of 0.002 ($p<0.05$) so that the data is not normally distributed. The motivation variable before the intervention obtained a significance value of 0.052 ($p>0.05$) which indicates the data is normally distributed, and motivation after the intervention has a significance value of 0.131 ($p>0.05$) which also indicates the data is normally distributed. Thus, because there is one variable that is not normally distributed, the bivariate analysis to test the differences before and after the intervention can use a non-parametric test, namely the Wilcoxon test.

Table 4. The Influence of Conscious Education on the Knowledge Level of Adolescent Female Students

Variable	n	Mean	Mean Differ.	Standard Dev.	Z	P-value
Before Intervention	40	9.83	3.6	2.581	-5.395	0.000
After Intervention	40	13.43		1.517		

Based on Table 4, the average knowledge of female students before the intervention was 9.83 (SD = 2.581) and increased to 13.43 (SD = 1.517) after the intervention, with a mean difference of 3.6. The results of the Wilcoxon test obtained a Z value = -5.395 and p-value = 0.000 ($p < 0.05$), so it can be concluded that there is a significant influence of BSE education on increasing the knowledge of female students at SMP Negeri 11 Jambi City.

Table 5. The Influence of Conscious Education on the Motivation of Adolescent Female Students

Variable	n	Mean	Mean Differ.	Standard Dev,	Z	P-value
Before Intervention	40	29.03	5.5	6.104	-4.986	0.000
After Intervention	40	34.53		6.051		

Based on table 5, it is known that the average motivation of female students before the intervention was 29.03 (SD = 6.104) and increased to 34.53 (SD = 6.051) after the

intervention, with a mean difference of 5.5. The results of the Wilcoxon test showed a Z value = -4.986 and p-value = 0.000 ($p < 0.05$), so it can be concluded that there is a significant influence of BSE education on increasing the motivation of female students at SMP Negeri 11 Jambi City.

Discussion

Based on the research results, the level of knowledge of 40 female students before being given BSE education was mostly in the poor to sufficient category, with 16 (40%) having sufficient knowledge, 15 (37.5%) having poor knowledge, and 9 (22.5%) having good knowledge. This condition indicates that adolescents' understanding of early detection of breast cancer through breast self-examination is still not optimal. This finding is in line with previous research which stated that before health education, 68.1% of adolescent girls had low knowledge about BSE (Deteksi et al., 2023).

This low level of knowledge indicates that respondents do not fully understand the meaning, purpose, timing, and steps of breast self-examination. Previous research also indicates that before being provided with educational media, the majority of adolescents had limited knowledge regarding breast self-examination techniques and procedures (Issue et al., 2022). Adolescents' lack of knowledge can be influenced by limited access to reproductive health information in schools and other educational media. Adolescents who have good access to reproductive health information tend to have higher levels of knowledge about reproductive health issues (Saputri et al., 2025).

Furthermore, the perception of breast cancer risk among adolescents remains relatively low because the disease is more often associated with adult women. This results in adolescents not prioritizing breast self-examination (BSE) as a health behavior. This finding is consistent with a 2023 WHO report, which stated that awareness of early breast cancer detection among young people still needs to be improved through structured education (World Health Organization, 2023). Thus, before the education, most female students lacked adequate knowledge about breast self-examination (BSE). Therefore, health education interventions are a crucial step in improving adolescent understanding as a first step in developing behaviors for early breast cancer detection.

Based on the research conducted, adolescent motivation levels before BSE education showed that the majority of respondents (35 respondents) were in the moderate motivation category (87.5%), with 3 respondents (7.5%) in the low motivation category, followed by 2 respondents (5%). This figure indicates that adolescents do not yet have a

strong awareness and desire to perform early breast cancer self-examination independently.

This finding aligns with previous research, which showed that before the BSE education intervention, adolescent motivation to perform breast self-examination was relatively low. There was a significant increase in motivation after the education ($p = 0.000$), indicating the importance of health education in stimulating preventive action. This finding is supported by other findings showing that the majority of students had never performed BSE and had very low levels of knowledge before the education, a condition that typically correlates with low motivation for early breast cancer detection (Andi Ria Metasari, 2022).

Furthermore, previous research found that before education was provided, adolescents' motivation to perform BSE was moderate at 49% and low at 33%, while only 18% were in the high category. This data suggests that without structured education, most adolescents lack strong motivation to perform early breast cancer detection (Sari, 2022). This is followed by other research that indicates that adolescent motivation to perform breast self-examination is relatively low, at 65.7%. Adolescents with limited access to information tend to have lower motivation. This suggests that, before formal education in schools, limited information is a factor influencing low motivation to perform BSE (Yuliatun et al., 2023).

Adolescent motivation before receiving education was still in the moderate and low categories, indicating that female students had not received systematic exposure to reproductive health information. The lack of incentives and understanding of the importance of early detection has resulted in suboptimal motivation to perform breast self-examination (BSE). Therefore, health education is needed to increase awareness and motivation among adolescents from school age.

After receiving education about BSE, there was an increase in the level of knowledge of female students at SMP Negeri 11 in Jambi City regarding breast self-examination. The structured and planned education helped students understand the material more comprehensively, from the definition of BSE, the purpose of early breast cancer detection, to the correct steps for self-examination. 32 students (80%) received a good score, followed by 7 students (17.5%), and 1 student (2.5%) received a poor score.

The results of this study are in line with the promotional program carried out by previous studies, where school-based health promotion activities were able to significantly increase the knowledge of young women about BSE through counseling

activities and interactive media, the average knowledge score of participants increased from 5.2 before the intervention (low category) to 8.1 after the intervention (high category), with an increase of 2.9 points (Nurianti & Batubara, 2025).

Other research also confirms that BSE education has a positive effect on the knowledge and skills of female students in conducting breast self-examination, where the knowledge of female students before health education was mostly in the good category, namely 3%, and after health education, the knowledge of female students was mostly in the good category, namely 100%, which shows that the right educational method can increase the understanding and readiness of adolescents in conducting early detection. (Nurul et al., 2024).

In general, the results of this study indicate that BSE education provided in schools is effective in increasing adolescents' knowledge levels. This increase demonstrates that health education interventions are an appropriate strategy for raising adolescent awareness of the importance of breast self-examination from an early age.

Based on the results of the study, after the BSE education, there was an increase compared to before the intervention. After the education, the number of respondents in the moderate category decreased to 34 (85%), but there was an increase in the strong category to 6 (15%), and there were no longer any respondents in the weak category (0%).

These results are consistent with previous research showing that breast self-examination education has a significant impact on increasing student motivation to perform BSE. The average motivation of adolescent girls to perform breast self-examination was still relatively low (32.9%), but after the health education, the number increased significantly (90.5%), demonstrating the effectiveness of education in increasing motivation. This education was able to increase adolescents' interest in BSE through the delivery of clear and directly measurable material (Ayu et al., 2025).

Another study also found that after education, the number of respondents with high motivation increased significantly compared to before the education. Thirty-seven out of 38 respondents had strong motivation, meaning 97.4% of respondents were highly motivated after the education. This data indicates a significant increase in motivation after BSE education (Agustin, 2023).

Theoretically, this increased motivation can be explained through the Health Belief Model, which suggests that health education can increase a person's perceived vulnerability, perceived benefits, and confidence in performing preventive measures such as BSE. When adolescents are aware of their early risk of breast cancer and understand

the benefits of early detection through BSE, their motivation to perform the examination will significantly increase (Alyafei, 2024).

Based on the results of the bivariate analysis using the Wilcoxon Signed Rank Test, a p-value of 0.000 ($p < 0.05$) was obtained for both the knowledge and motivation variables. This indicates a significant effect of BSE education on increasing adolescents' knowledge and motivation to perform breast self-examination. Therefore, the research hypothesis was accepted, indicating that BSE education was effective in increasing female students' knowledge and motivation.

The increase in knowledge after the education was provided occurred because respondents received structured information regarding the definition of BSE, its purpose, timing, and the correct examination steps. Health education has been shown to improve individual understanding through the process of providing systematic information stimuli. This aligns with previous research showing that health education significantly increases adolescents' knowledge about early breast cancer detection ($p < 0.05$). The study reported an increase in knowledge scores after the educational intervention (Nurhayati, 2023).

Furthermore, the increase in motivation in this study also showed a significant change after education was provided ($p = 0.000$). Education not only improves the cognitive aspect (knowledge), but also influences the affective aspect and the internal drive of adolescents to take preventive measures. The study reported a significant increase in adolescent motivation after BSE education, with the Wilcoxon test results showing $p = 0.000$ ($p < 0.05$). Before education, the majority of respondents had moderate and low motivation. After education, motivation increased to the good/high category. This means that health education about BSE is effective in increasing adolescent motivation to perform early breast cancer detection independently (Andi Ria Metasari, 2022).

Another result that aligns with the findings of this researcher reported that after BSE education, the proportion of respondents with low knowledge decreased sharply, while the proportion of respondents with high knowledge increased from 32.9% to 90.5% after the education. Respondents' motivation levels also increased from 32.9% (low motivation) before the education to 90.5% of highly motivated respondents after the education. These results indicate that education not only improves the cognitive aspect (knowledge) but also influences the affective/personal aspect (motivation) of respondents (Ayu et al., 2025).

These findings also strengthen the relationship between knowledge and motivation in health behavior, stating that the higher a person's knowledge about a preventive measure, the more likely they are to be motivated to perform it. This suggests that systematic, evidence-based BSE education is an effective strategy for promoting and preventing the health of adolescent girls.

CONCLUSION

Based on research on 40 female students of SMP Negeri 11 Jambi City, there was an increase in the average knowledge from 7.90 to 11.68 with a difference of 3.78 and the Wilcoxon test results showed a p-value = 0.000 (p <0.05), which means there is a significant effect of BSE education on knowledge. In the motivation variable, the average increased from 45.48 to 49.75 with a difference of 4.27 and a p-value = 0.000 (p <0.05), so BSE education also had a significant effect on female students' motivation. Thus, BSE education is effective in increasing the knowledge and motivation of adolescents at SMP Negeri 11 Jambi City.

REFERENCES

Agustin, N. D. D. W. N. A. A. (2023). PENGARUH TINGKAT PENGETAHUAN DAN MOTIVASI TERHADAP KETERAMPILAN PEMERIKSAAN PAYUDARA SENDIRI (SADARI) PADA REMAJA PUTRI DI SMP NEGERI 1 KRAS KABUPATEN KEDIRI. *Jurnal Nusantara Medika*, 7. https://doi.org/10.29407/judika.v7i2.21391

Alyafei, A. R. E.-C. (2024). THE HEALTH BELIEF MODEL OF BEHAVIOR CHANGE. In *NCBI Bookshelf*. U.S. National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/NBK606120/

Andi Ria Metasari, N. (2022). THE EFFECT OF HEALTH EDUCATION ABOUT BREAST SELF-EXAMINATION (SADARI) ON ADOLESCENT MOTIVATION IN EARLY DETECTION OF BREAST CANCER. *International Journal of Public Health Excellence (IJPHE)*. https://doi.org/10.55299/ijphe.v2i1.189

Aprianti, N., & Diniyah, K. (2025). FAKTOR-FAKTOR YANG BERHUBUNGAN DENGAN PERILAKU SADARI PADA REMAJA PUTRI DI UNIVERSITAS ‘AISYIYAH YOGYAKARTA. 3, 597–606.

Ayu, J. D., Anggraini, D., Putri, N. A., & Dari, W. (2025). THE EFFECT OF BREAST SELF-EXAMINATION HEALTH EDUCATION ON KNOWLEDGE AND MOTIVATION TO PERFORM BREAST SELF-EXAMINATION IN ADOLESCENT FEMALES AT SMAN 2 WAY TENONG. 4(3), 701–710.

Berliere, M., Duhoux, F. P., François, A., & Galant, C. (2023). BREAST DEVELOPMENT AND CANCER. *Cancers*, 15(6), 7–9. https://doi.org/10.3390/cancers15061731

Cancer, I. A. for Research on. (2025). BREAST CANCER. https://www.iarc.who.int/cancer-type/breast-cancer

Deteksi, P., Kanker, D., & Pada, P. (2023). DETEKSI DINI KANKER PAYUDARA. *Jurnal Alaqoh*, 10(1), 5–9.

Ginsburg, O., Yip, C. H., Brooks, A., et al. (2020). BREAST CANCER EARLY DETECTION: A PHASED APPROACH TO IMPLEMENTATION. *Cancer*, 126(S10), 2379–2393. https://doi.org/10.1002/cncr.32887

Hamidah, S., & Rizal, M. S. (2022). EDUKASI KESEHATAN REPRODUKSI DAN PERKEMBANGAN REMAJA DI PANTI ASUHAN YATIM MUHAMMADIYAH. *Journal of Community Engagement in Health*, 5(2), 237–248.

Hero, S. K. (2021). FAKTOR RISIKO KANKER PAYUDARA. *Jurnal Medika Hutama*, 3(1), 1533–1537.

Issue, S., Self, B., Bse, E., Anggriani, Y., & Rahayu, S. (2022). THE USE OF VIDEO MEDIA AGAINST ADOLESCENT KNOWLEDGE LEVEL OF BREAST SELF-EXAMINATION. *Jurnal Aisyah: Jurnal Ilmu Kesehatan*, 7, 51–54. https://doi.org/10.30604/jika.v7iS1.1198

Istiqomah, R. N., Ratnawati, A. E., & Iriyani, E. (2023). PENGARUH PENYULUHAN PEMERIKSAAN PAYUDARA (SADARI) MELALUI MEDIA VIDEO TERHADAP TINGKAT PENGETAHUAN TENTANG SADARI PADA REMAJA PUTRI. *Jurnal Ilmiah Multi Disiplin Indonesia*, 2(11).

Jitasari Tarigan Sibero, J. T., Siregar, A. P., & F. (2021). PENINGKATAN PENGETAHUAN REMAJA UNTUK DETEKSI DINI KANKER PAYUDARA DENGAN EDUKASI DAN PELAKSANAAN SADARI DI YAYASAN PERGURUAN BUDI AGUNG MEDAN TAHUN 2021. 2(3), 705–712.

Kementerian Kesehatan Republik Indonesia. (2024). MENGAPA HARUS MELAKUKAN SADARI (PERIKSA PAYUDARA SENDIRI)? https://p2ptm.kemkes.go.id/informasi-p2ptm/mengapa-harus-melakukan-sadari-periksa-payudara-sendiri-yuk-simak-infografis-berikut

Kusumawaty, J., Noviati, E., Sukmawati, I., Srinayanti, Y., & Rahayu, Y. (2021). EFEKTIVITAS EDUKASI SADARI UNTUK DETEKSI DINI KANKER PAYUDARA. *ABDIMAS: Jurnal Pengabdian Masyarakat*, 4(1), 496–501. https://doi.org/10.35568/abdimas.v4i1.1177

Mustikasari, R., Pratama, K., & Susanti, D. (2021). UPAYA DETEKSI DINI KANKER PAYUDARA PADA REMAJA PUTERI. *Afiasi: Jurnal Kesehatan Masyarakat*, 6(1), 13–18.

Nnaji, C. A., Kuodi, P., Walter, F. M., & Moodley, J. (2022). EFFECTIVENESS OF INTERVENTIONS FOR IMPROVING TIMELY DIAGNOSIS OF BREAST AND CERVICAL CANCERS IN LOW- AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW. *BMJ Open*, 12(4), 1–13. https://doi.org/10.1136/bmjopen-2021-054501

Nurhayati, P. S. N. H. Y. I. (2023). PENGARUH PENDIDIKAN KESEHATAN MENGGUNAKAN MEDIA VIDEO, DEMONSTRASI, DAN LEAFLET TERHADAP PENGETAHUAN SADARI PADA REMAJA PUTRI. *Jurnal Ilmu Keperawatan*, 12, 106–111.

Nurianti, I., & Batubara, J. D. (2025). UPAYA PENINGKATAN PENGETAHUAN REMAJA PUTRI MENGENAI SADARI MELALUI KEGIATAN PROMOSI KESEHATAN. 276–281.

Nursyahrani, R. A., et al. (2024). PEMANFAATAN BAHAN ALAMI DALAM SEDIAAN MASKER UNTUK MENGATASI PERMASALAHAN SEMUA JENIS KULIT. *Jurnal Keperawatan dan Kesehatan*, 15(1), 1–12. https://doi.org/10.54630/jk2.v15i1.320

Nurul, U., et al. (2024). PENGARUH EDUKASI KESEHATAN TENTANG SADARI TERHADAP PENGETAHUAN DAN KETERAMPILAN SISWI. 5(4), 512–522. https://doi.org/10.33650/trilogi.v5i4.9060

World Health Organization. (2025). BREAST CANCER: RISK FACTORS. https://www.who.int/news-room/fact-sheets/detail/breast-cancer

Rahmadini, A. F., D. S., R. K., & Agustiani, T. (2022). EDUKASI PERILAKU SADARI DALAM PENCEGAHAN KANKER PAYUDARA PADA REMAJA. *Jurnal*

Pemberdayaan dan Pendidikan Kesehatan, 1(2), 105–113. https://doi.org/10.34305/jppk.v1i02.433

Rokom. (2022). KANKER PAYUDARA PALING BANYAK DI INDONESIA, KEMENKES TARGETKAN PEMERATAAN LAYANAN KESEHATAN. Kementerian Kesehatan RI.

Rosyidah, N. N. A. S. (2023). PENGARUH PENDIDIKAN KESEHATAN TENTANG SADARI DENGAN MEDIA DEMONSTRASI DAN VIDEO TERHADAP PERILAKU SADARI PADA REMAJA PUTRI. *Jurnal Pengembangan Ilmu dan Praktik Kesehatan*, 2.

Saputri, L. W., Surmiasih, S., Putri, R. H., & Kusuma, A. (2025). AKSES INFORMASI DAN PENGETAHUAN DENGAN PERILAKU KESEHATAN REPRODUKSI REMAJA. 5(2), 200–209.

Sari, R. J. (2022). PENGETAHUAN, SIKAP DAN MOTIVASI REMAJA PUTRI TENTANG DETEKSI DINI KANKER PAYUDARA MELALUI SADARI. 11, 305–314.

Vohra, L. M., Ali, D., Hashmi, S. A., & Angez, M. (2022). BREAST CANCER IN A TEENAGE GIRL WITH BRCA MUTATION: A CASE REPORT FROM A LOW MIDDLE-INCOME COUNTRY. *International Journal of Surgery Case Reports*, 98. https://doi.org/10.1016/j.ijscr.2022.107513

Wijayanti, N., Triyanta, T., & Ani, N. (2020). EFEKTIVITAS PENYULUHAN KESEHATAN SADARI DENGAN MEDIA VIDEO TERHADAP PENGETAHUAN PADA REMAJA PUTRI. *Jurnal Ilmu Kesehatan Masyarakat Berkala*, 2(1), 49. https://doi.org/10.32585/jikemb.v2i1.816

World Health Organization. (2023). BREAST CANCER FACT SHEET. https://www.who.int/news-room/fact-sheets/detail/breast-cancer

World Health Organization. (2024). BREAST CANCER INEQUITIES. https://www.who.int/initiatives/global-breast-cancer-initiative/breast-cancer-inequities

Yuliatun, L., Saputriyana, T., Masitah, P. D., Astari, A. M., & Fevriasanty, I. (2023). THE RELATIONSHIP OF KNOWLEDGE, FAMILY SUPPORT, AND HEALTH INFORMATION ACCESSIBILITY WITH BREAST SELF-EXAMINATION BEHAVIOR, 3283–3293.