



**ADOLESCENT REPRODUCTIVE HEALTH EDUCATION AND ITS EFFECTS ON
KNOWLEDGE AND SELF-REGULATION FOR EARLY BREAST CANCER
DETECTION: A LITERATURE REVIEW**

Novita Rizkia Suswanti Putri*, Sri Wahyuni, Nopi Nur Khasanah, Tutik Rahayu

Faculty of Nursing Science, Universitas Islam Sultan Agung, Jl. Kaligawe Raya No.Km.4, Terboyo Kulon, Genuk,
Semarang, Jawa Tengah 50112, Indonesia

*novitarizkia79@gmail.com

ABSTRACT

Breast cancer remains a major global health concern, underscoring the importance of prevention and early detection strategies. Breast self-examination (BSE) is a simple and accessible method that can be introduced during adolescence. However, its implementation remains limited due to inadequate knowledge, low risk perception, and limited self-regulation skills related to maintaining breast health. This systematic literature review aimed to examine the effects of adolescent reproductive health education on knowledge and self-regulation in supporting early breast cancer detection among adolescents. A literature review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. Relevant studies published between 2021 and 2026 were identified through searches of PubMed, ScienceDirect, Wiley Online Library, and Google Scholar. The search strategy was adapted to the characteristics of each database using combinations of keywords and Boolean operators (AND and OR). The general search strategy was: ("Adolescent Reproductive Health Education" OR "Adolescent Health Education" OR "Health Education") AND ("Breast Cancer" OR "Breast Cancer Awareness" OR "Breast Self-Examination" OR "SADARI") AND ("Knowledge" OR "Self-Regulation" OR "Self-Efficacy" OR "Health Behavior"). A total of 551 articles were identified, and 10 studies met the eligibility criteria and were included in the narrative synthesis. The findings indicate that adolescent reproductive health education delivered through BSE education, educational leaflets, audiovisual media, virtual education, and hands-on training can improve knowledge, motivation, self-efficacy, and the ability to perform early breast cancer detection. Educational interventions also demonstrated potential to strengthen adolescents' confidence and self-regulatory capacity in adopting breast health practices. Adolescent reproductive health education plays an important role in improving knowledge and self-regulation related to early breast cancer detection.

Keywords: adolescent reproductive health education; breast cancer; breast self-examination; early detection; knowledge; self-regulation

How to cite (in APA style)

Putri, N. R. S., Wahyuni, S., Khasanah, N. N., & Rahayu, T. (2026). Adolescent Reproductive Health Education and Its Effects on Knowledge and Self-Regulation for Early Breast Cancer Detection: A Literature Review. *Indonesian Journal of Global Health Research*, 8(6), 675–684. <https://doi.org/10.37287/ijghr.v8i6.2758>.

INTRODUCTION

Breast cancer (Ca mammae) is one of the most common malignancies worldwide, with its incidence continuing to rise and posing a major global health challenge (Pezzolato et al., 2023). Early detection through breast self-examination (BSE) plays an important role in increasing individuals' awareness of breast changes at an early stage (Aurilia, 2023). However, the adoption of BSE among younger populations remains suboptimal because of limited knowledge, low perceived risk of breast cancer, and inadequate capacity to independently manage health-related behaviors (Salahshouri et al., 2024; Huang & Lo, 2023; Mahar et al., 2026).

Adolescence represents a strategic period for health promotion and disease prevention because knowledge, attitudes, and health habits established during this stage may influence health behaviors later in life (Rahayu et al., 2023). Adolescent reproductive health education (ARHE) is a potentially valuable approach for improving adolescents' reproductive health literacy, including their understanding of breast cancer risk factors, the importance of early detection, and the skills required to perform BSE (Umanailo, 2021). However, increasing knowledge alone may not be

sufficient to produce sustained changes in health behavior. Behavioral change also requires self-regulation, defined as an individual's ability to regulate thoughts, motivation, and actions in order to initiate and maintain health-promoting behaviors consistently. Therefore, health education interventions should address not only the acquisition of information but also the strengthening of self-efficacy, risk awareness, and individuals' capacity to make informed health-related decisions (Yu et al., 2022; Dahliana & Agustina, 2023; Kumala et al., 2024).

Based on these considerations, a systematic examination of the available evidence is needed to determine how adolescent reproductive health education influences knowledge and self-regulation in support of early breast cancer detection among adolescents. This systematic literature review aimed to identify, evaluate, and synthesize evidence regarding the effectiveness of adolescent reproductive health education in improving knowledge, strengthening self-regulatory capacity, and promoting early breast cancer detection practices through BSE.

METHOD

Study Design

This study employed a literature review conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines.

Research Question and PICO Framework

The research question was formulated using the PICO framework. The population (P) consisted of adolescent girls or young women; the intervention (I) comprised reproductive health education, breast cancer education, or BSE education; the comparison (C) included a control group or pre-intervention condition; and the outcomes (O) included changes in breast cancer knowledge, self-efficacy, motivation, behavioral intentions, self-regulation, and BSE practices. The review question was: What is the effect of adolescent reproductive health education on knowledge and self-regulation related to early breast cancer detection among adolescent girls and young women?

Literature Search Strategy

A literature search was conducted using four electronic databases: PubMed, ScienceDirect, Wiley Online Library, and Google Scholar. Studies published from January 2021 through 2026 were considered eligible. Articles were eligible if they were available in full text and published in either English or Indonesian. The search strategy was adapted to the characteristics of each database and used combinations of keywords and Boolean operators (AND and OR). The general search strategy was: ("Adolescent Reproductive Health Education" OR "Adolescent Health Education" OR "Health Education") AND ("Breast Cancer" OR "Breast Cancer Awareness" OR "Breast Self-Examination" OR "SADARI") AND ("Knowledge" OR "Self-Regulation" OR "Self-Efficacy" OR "Health Behavior"). Search terms were modified as necessary for individual databases to maximize the retrieval of relevant studies.

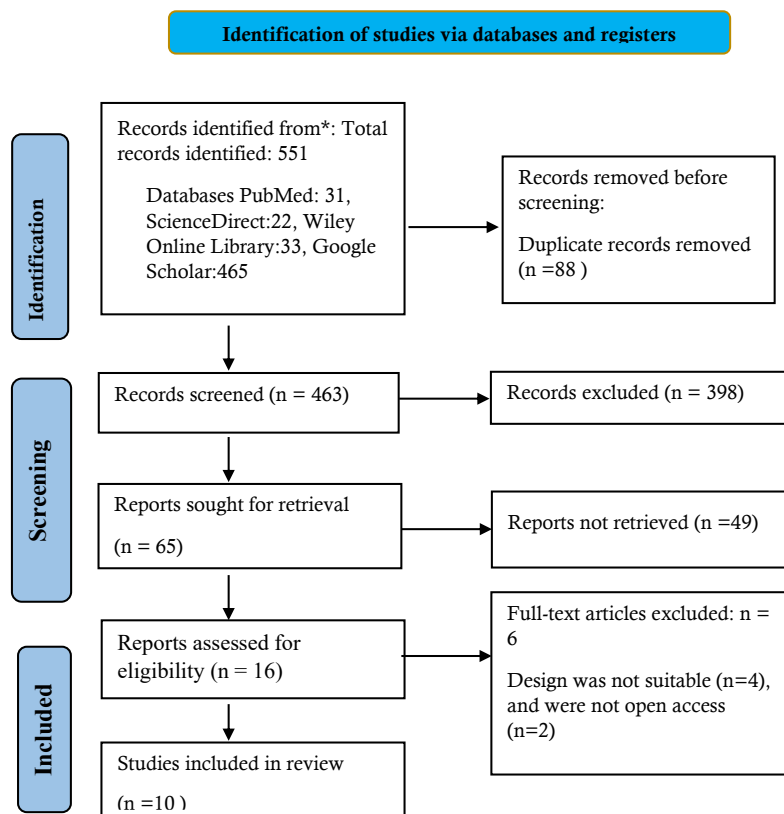
Inclusion and Exclusion Criteria

Studies were included if they met the following criteria: (1) the study population consisted of adolescent girls or young women; (2) the study evaluated an intervention involving reproductive health education, breast cancer education, or BSE education; (3) the study reported at least one outcome related to breast cancer knowledge, self-regulation, self-efficacy, health perceptions, motivation, behavioral intentions, or BSE practices; (4) the study used an experimental, quasi-experimental, randomized controlled trial (RCT), or relevant observational design; (5) the study was published between 2021 and 2026; (6) the article was published in English or Indonesian; and (7) the full text was available. Studies were excluded if they met any of the following criteria: (1) the study involved an adult population without a separate adolescent or young-women subgroup; (2) the study was conducted in animals or laboratory settings; (3) the publication was a literature review, editorial, letter to the editor, conference abstract, or case report; (4) the study did not evaluate an

educational intervention related to breast cancer or early detection; or (5) the full-text article was unavailable.

Study Selection Process

The study selection process was conducted in accordance with the PRISMA 2020 guidelines and is presented in the PRISMA flow diagram (Figure 1). Records identified through database searches were first screened for duplicates. The remaining records were screened based on their titles and abstracts. Potentially relevant articles were then retrieved for full-text assessment against the predefined eligibility criteria. Studies that met all inclusion criteria were included in the final systematic review.



Study Selection Process Following PRISMA 2020
Figure 1. PRISMA Flow Diagram of Study Selection Process

During the identification stage, 551 records were identified through electronic database searches, including 31 records from PubMed, 22 from ScienceDirect, 33 from Wiley Online Library, and 465 from Google Scholar. Before screening, 88 duplicate records were removed, leaving 463 records for title and abstract screening. During the screening stage, all 463 records were screened based on their titles and abstracts. Of these, 398 records were excluded because they did not meet the predefined eligibility criteria, including inappropriate populations, interventions, outcomes, or study topics unrelated to adolescent reproductive health education, breast cancer knowledge, self-regulation, or breast self-examination (BSE).

Subsequently, 65 reports were sought for retrieval. Of these, 49 reports could not be retrieved because full-text access was unavailable or the available information was insufficient for eligibility assessment. The remaining 16 full-text articles were assessed for eligibility. Six articles were excluded during the full-text assessment because of an inappropriate study design ($n = 4$) or the unavailability of open-access full-text publications ($n = 2$). Ultimately, 10 studies met all eligibility criteria and were included in the systematic review.

Quality Appraisal

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools, with the appraisal tool selected according to the design of each individual study. Each study was assessed using the criteria applicable to its respective methodological design. For each appraisal item, the response was categorized as “Yes,” indicating that the criterion was adequately met; “No,” indicating that the criterion was not met; “Unclear,” indicating that insufficient information was available to make a determination; or “Not Applicable,” indicating that the criterion was not relevant to the study design.

Table 1.

Methodological Quality Assessment of Included Studies (JBI)

No.	Author(s) and Year	Study Design	JBI Appraisal Instrument	Quality Appraisal Results	Quality Category
1	Legi et al. (2024)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	8 items rated “Yes,” 1 item rated “Unclear”	High
2	Kucheki et al. (2024)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	8 items rated “Yes,” 1 item rated “Unclear”	High
3	Uruntie et al. (2024)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	7 items rated “Yes,” 2 items rated “Unclear”	Moderate–High
4	Dure Shahwar et al. (2026)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	8 items rated “Yes,” 1 item rated “Unclear”	High
5	Ağadayı et al. (2026)	Randomized controlled trial	JBI Critical Appraisal Checklist for Randomized Controlled Trials (13 items)	12 items rated “Yes,” 1 item rated “Unclear”	High
6	Nurianti & Batubara (2025)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	7 items rated “Yes,” 2 items rated “Unclear”	Moderate–High
7	Desri Ayu et al. (2025)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	8 items rated “Yes,” 1 item rated “Unclear”	High
8	Ibitoye & Tshwenegae (2021)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	8 items rated “Yes,” 1 item rated “Unclear”	High
9	Kamariyah et al. (2026)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	7 items rated “Yes,” 2 items rated “Unclear”	Moderate–High
10	Kurt & Kayışkiran (2026)	Quasi-experimental	JBI Critical Appraisal Checklist for Quasi-Experimental Studies (9 items)	8 items rated “Yes,” 1 item rated “Unclear”	High

RESULT

Data were extracted from the 10 studies that met the predefined inclusion criteria and were considered relevant to the effects of adolescent reproductive health education on knowledge and self-regulation related to early breast cancer (Ca mammae) detection. The extracted data included study characteristics such as the author(s) and publication year, article title, study design, sample size, type and delivery of the educational intervention, study variables, and key findings.

The review findings showed that most of the included studies used a quasi-experimental design, whereas one study employed a randomized controlled trial (RCT). The educational interventions varied across studies and included breast self-examination (BSE) education, reproductive health education, educational leaflets, audiovisual materials, virtual education, and hands-on training. Overall, the studies reported improvements in breast cancer-related knowledge and several behavioral determinants, including self-efficacy, motivation, behavioral intention, and BSE practices.

Table 2.
Data Extraction Results of the Included Studies

Author(s) and Year	Article Title	Study Design	Sample	Intervention	Outcomes Assessed	Main Findings
Julita Legi et al. (2024)	Effectiveness of Health Education on Breast Self-Examination (BSE) and Knowledge of Breast Cancer Prevention	Quasi-experimental	30 female students aged 14–16 years	BSE education using leaflets	Breast cancer knowledge	The educational intervention improved knowledge of breast cancer prevention.
Kucheki et al. (2024)	The Effect of a Virtual Educational Intervention Based on Self-Efficacy on Breast Self-Examination Skills	Quasi-experimental	146 women	Virtual education based on self-efficacy principles	Self-efficacy and BSE skills	The intervention improved self-efficacy and BSE skills.
Uruntie et al. (2024a)	Effect of Educational Intervention on the Knowledge, Attitude, and Practice of Breast Self-Examination Among Female Students	Quasi-experimental	103 female university students	BSE educational program	Knowledge, attitudes, and BSE practices	The educational intervention improved knowledge, attitudes, and BSE practices.
Dure Shahwar et al. (2026)	The Effectiveness of Health Promotion (Audiovisual and Leaflet) on Adolescents' Behavior Regarding Breast Self-Examination	Quasi-experimental	80 adolescent girls	Audiovisual and leaflet-based education	Knowledge and BSE behavior	Educational media improved behaviors related to early breast cancer detection.
Ağadayı et al. (2026)	Effects of Hands-On Breast Self-Examination Training on Knowledge, Health Beliefs, and BSE Practice Among Female University Students: A Randomized Controlled Trial	Randomized controlled trial	40 female university students, divided into a theory-only group (n = 20) and a theory-plus-hands-on training group (n = 20)	Theory-based education versus theory-based education combined with hands-on BSE training	Breast cancer knowledge, health beliefs, self-efficacy, perceived barriers, and BSE practice	Knowledge increased significantly ($p < 0.001$). The theory-plus-hands-on training group demonstrated greater improvements in self-efficacy ($p = 0.005$), reduced perceived barriers ($p < 0.001$), and higher BSE practice scores.
Nurianti & Batubara (2025)	Efforts to Improve Female	Quasi-experimental	20 adolescent girls	BSE health promotion	Knowledge	Health promotion improved adolescents'

Author(s) and Year	Article Title	Study Design	Sample	Intervention	Outcomes Assessed	Main Findings
	Adolescents' Knowledge of Breast Self-Examination Through Health Promotion Activities					understanding of BSE.
Desri Ayu et al. (2025)	The Effect of Breast Self-Examination Health Education on Knowledge and Motivation to Perform BSE Among Female Adolescents	Quasi-experimental	31 adolescent girls	BSE education	Knowledge and motivation	BSE education improved motivation to perform BSE.
Ibitoye & Tshwenegae (2021)	The Impact of Education on Knowledge, Attitude, and Practice of Breast Self-Examination Among Adolescent Girls at Fiwasaye Girls Grammar School, Akure, Nigeria	Quasi-experimental	280 adolescent girls; mean age 13.21 years	BSE education and training	Knowledge, attitudes, and BSE practices	The proportion of adolescents who knew about BSE increased from more than 60% to 91.7%. Attitudes and BSE practices also improved significantly.
Kamariyah et al. (2026)	Effect of Breast Self-Examination Education on Knowledge and Motivation Among Female Students	Quasi-experimental	Female junior high school students	BSE education	Knowledge and motivation	BSE education improved knowledge and motivation.
Kurt & Kayışkiran (2026)	Breast Cancer and Self-Examination Education: Effects on Adolescent Knowledge Levels	Quasi-experimental	178 adolescent girls in Bartın, Türkiye; mean age 14.8 years	Face-to-face education using two modules covering breast cancer awareness and BSE	Breast cancer knowledge, misconceptions, screening/early detection, and BSE practices	Breast cancer knowledge scores increased following the educational intervention.

Synthesis of Study Findings

The synthesis of the 10 included studies indicates that adolescent reproductive health education (ARHE) is associated with improvements in adolescents' knowledge of breast cancer and awareness of the importance of early detection. A range of educational approaches, including interactive lectures, audiovisual materials, leaflets, virtual education, and peer-based approaches, were reported to improve participants' understanding of breast cancer risk factors, early signs and symptoms, and breast self-examination (BSE) procedures.

Effects of ARHE on Breast Cancer Knowledge

Pengaruh ARHE terhadap Pengetahuan Kanker Payudara

Most studies reported significant improvements in participants' knowledge following health education interventions. Improvements were observed in understanding breast cancer, risk factors, the importance of early detection, and the correct steps for performing BSE (Uruntie et al., 2024; Kurt & Kayışkiran, 2026). Educational approaches incorporating visual media and participatory learning also demonstrated consistent benefits in improving adolescents' understanding, potentially by increasing engagement and active participation during the learning process (Shahwar et al., 2026).

Effects of Education on Self-Regulation and Self-Efficacy

Several studies suggest that improvements in knowledge may need to be accompanied by strengthening psychological and behavioral determinants to support sustained changes in health behavior. Interventions based on self-efficacy principles were associated with increased confidence in performing BSE, greater awareness of breast cancer risk, stronger perceptions of the benefits of BSE, and improved capacity to engage in health-promoting behaviors. These findings suggest that self-efficacy and related self-regulatory processes may contribute to the pathway linking improved knowledge with the adoption of early breast cancer detection behavior (Yu et al., 2022).

Effects on Early Breast Cancer Detection Practices Through BSE

The findings indicate that health education may improve not only knowledge but also intention and engagement in BSE. Participants who received educational interventions generally demonstrated greater readiness and confidence to perform BSE independently. Hands-on training appeared particularly relevant for translating knowledge into practical skills, with evidence of improvements in self-efficacy and BSE practice following structured practical education (Ağadayı et al., 2026).

DISCUSSION

The findings of this systematic review indicate that adolescent reproductive health education addressing early breast cancer detection through breast self-examination (BSE) plays an important role in improving breast cancer-related knowledge and readiness to engage in preventive health behaviors. Adolescence represents a strategic period for establishing health awareness because individuals are developing cognitive skills, decision-making abilities, and greater capacity for independent health behavior regulation. In this review, Legi et al. (2024) reported that leaflet-based BSE education improved knowledge of breast cancer prevention among female students aged 14–16 years. These findings are consistent with those of Ibitoye and Tshwenegae (2021), who found that BSE education among 280 adolescent girls increased awareness of breast self-examination, with the proportion of participants reporting knowledge of BSE reaching 91.7% following the intervention. Collectively, these findings suggest that limited adolescent awareness of breast cancer may reflect not only inadequate access to information but also insufficient exposure to age-appropriate and developmentally relevant reproductive health education.

However, increased knowledge alone may not be sufficient to produce sustained early detection behaviors. From a behavioral perspective, self-regulation involves the ability to monitor, initiate, control, and maintain health-related thoughts, motivation, and actions. Self-efficacy is an important construct within this process because individuals who feel more confident in their ability to perform a health behavior may be more likely to initiate and maintain that behavior. Kucheki et al. (2024) demonstrated that a self-efficacy-based educational intervention improved both BSE skills and participants' confidence in performing BSE independently. Similarly, Ağadayı et al. (2026) found that hands-on BSE training produced greater improvements than theory-based education alone, particularly in self-efficacy, perceived barriers, and BSE practice. These findings support an educational approach that extends beyond information transfer by incorporating skills training, active participation, and opportunities to build confidence in performing BSE.

The effectiveness of health education may also depend on the delivery format and learning strategies used. Dure Shahwar et al. (2026) reported that a combination of audiovisual materials and leaflets improved BSE-related behaviors among adolescent girls. Audiovisual approaches may facilitate learning by providing a visual demonstration of procedural steps, thereby complementing information presented through text-based materials. Similar findings were reported by Nurianti and Batubara (2025) and Desri Ayu et al. (2025), who found that BSE-focused health promotion and education improved knowledge and motivation to perform BSE. These findings suggest that combining multiple educational modalities may address both the cognitive and behavioral components of health learning.

The role of practical training is particularly relevant because knowledge must be translated into the ability and confidence to perform BSE correctly. The findings from Ağadayı et al. (2026) indicate that adding hands-on training to theoretical education may provide additional benefits in strengthening self-efficacy, reducing perceived barriers, and encouraging BSE practice. Similarly, Kurt and Kayışkiran (2026) reported that an educational program incorporating breast cancer awareness and BSE training improved adolescents' knowledge and addressed misconceptions related to breast cancer screening and early detection. These findings suggest that educational programs may be more meaningful when they combine accurate information with practical demonstrations and opportunities for supervised skill development.

Nevertheless, the evidence should be interpreted with caution. Most of the included studies used quasi-experimental designs, while only one study used an RCT. Several studies also involved relatively small samples and evaluated outcomes over relatively short follow-up periods. Consequently, improvements in knowledge, motivation, self-efficacy, or BSE practice observed immediately after an intervention may not necessarily translate into sustained BSE behavior over time. Differences in intervention content, educational media, outcome measures, participant characteristics, and follow-up periods also limit direct comparisons across studies.

Another important consideration is the distinction between self-regulation and related behavioral constructs. Although the conceptual framework of this review emphasizes self-regulation, most included studies did not directly measure self-regulation as a primary outcome. Instead, they assessed related constructs such as self-efficacy, motivation, health beliefs, behavioral intention, and BSE practice. These constructs may reflect components or behavioral determinants associated with self-regulatory processes, but they should not be interpreted as direct measures of self-regulation. Future studies should therefore incorporate validated self-regulation measures and longer follow-up periods to determine whether educational gains are maintained and translated into consistent breast health behaviors.

Overall, the evidence suggests that adolescent reproductive health education that integrates breast cancer information, BSE skills training, and strategies to strengthen self-efficacy and related self-regulatory processes may provide a useful approach to supporting early breast cancer detection among adolescents. Educational programs implemented in schools and higher education settings may benefit from interactive methods, practical demonstrations, age-appropriate educational media, and opportunities for repeated reinforcement. Such approaches may help adolescents move beyond knowledge acquisition toward greater confidence and sustained engagement in breast health practices.

CONCLUSION

Based on the findings of this systematic review, adolescent reproductive health education focused on early breast cancer detection through breast self-examination (BSE) is associated with improvements in breast cancer-related knowledge, motivation, self-efficacy, and BSE-related behaviors among adolescents. The reviewed studies consistently indicate that health education can

improve adolescents' understanding of breast cancer risk factors, the importance of early detection, and the appropriate procedures for performing BSE independently.

The effectiveness of these interventions appears to extend beyond the delivery of information alone. Educational approaches that incorporate demonstrations, hands-on training, and audiovisual materials may provide additional benefits by strengthening self-efficacy, practical skills, and readiness to engage in BSE. These findings highlight the importance of integrating cognitive, affective, and behavioral components into adolescent reproductive health education to support the development of self-regulatory capacities related to breast health. However, because most included studies assessed related constructs such as self-efficacy, motivation, health beliefs, and BSE practice rather than self-regulation directly, the evidence for a direct effect on self-regulation remains limited.

REFERENCES

- Ağadayı, E., Arby, T. El, Balta, A. T., Odabaş, Ö. K., & Karagöz, N. (2026). Effects of hands-on breast self-examination training on knowledge, health beliefs, and BSE practice among female university students: a randomized controlled trial. *BMC Women's Health*. <https://doi.org/10.1186/s12905-026-04656-z>
- Aurilia, T. (2023). The Effectiveness of Health Education on Breast Self-Examination (S A D A R I) on Young Women's Knowledge About Early Detection of Breast Cancer. *HEALTH CARE: JURNAL KESEHATAN*, 11(2), 487–494. <https://doi.org/10.36763/healthcare.v11i2.234>
- Dahlia, M. D., & Agustina, I. F. (2023). E-Booklet media can increase teenagers' knowledge about breast self-examination. *Journal of Midwifery*, 8(2), 54. <https://doi.org/10.25077/jom.8.2.54-61.2023>
- Desri Ayu, J., Anggraini, D., Anggista Putri, N., & Dari, W. (2025). Effect of Breast Self-Examination Health Education on Knowledge and Motivation to Perform Breast Self-Examination in Adolescent Females at The SMAN 2 Way Tenong. *INDOGENIUS*, 4(3), 701–710. <https://doi.org/10.56359/igj.v4i3.615>
- Dure Shahwar, Mariam Ikhlaiq, Faiza Tabassam, Farida Jafar, Maryam Kataria, & Shaheer Aslam. (2026). Effectiveness of a Structured Health Education Program on Breast Self-Examination Practices Among Women. *Journal of Health, Wellness and Community Research*, 1–8. <https://doi.org/10.61919/zhry7010>
- Huang, J., & Lo, H. (2023). Lasting effects of a brief, scalable diabetes conversation map psychosocial intervention on health beliefs and health behaviors: A large randomized controlled trial in Taiwan. *Applied Psychology: Health and Well-Being*, 15(4), 1507–1529. <https://doi.org/10.1111/aphw.12449>
- Ibitoye, O. F., & Thupayegale-Tshwenegae, G. (2021). The Impact of Education on Knowledge Attitude and Practice of Breast Self-Examination Among Adolescents Girls at the Fiwasaye Girls Grammar School Akure, Nigeria. *Journal of Cancer Education*, 36(1), 39–46. <https://doi.org/10.1007/s13187-019-01595-2>
- Julita Legi, Winarsi Molintao, & Shania Moku. (2024). Effectiveness of health education Breast Self Examination (BSE) on knowledge of breast cancer prevention. *Health Sciences and Related Fields*, 12.
- Kamariyah Kamariyah, Yuliana Yuliana, & Yulia Indah Permata Sari. (2026). EFFECT OF BREAST SELF-EXAMINATION EDUCATION ON ADOLESCENTS' KNOWLEDGE AND MOTIVATION. *JURNAL MULTIDISIPLINER KAPALAMADA*, 5.
- Kucheki, M., Nazari, M., Arshadinejad, R., & Karimi, M. (2024). The effect of a virtual educational intervention based on self-efficacy theory on women's skills of breast self-examination. *BMC Women's Health*, 24(1), 625. <https://doi.org/10.1186/s12905-024-03471-8>
- Kumala, R. N., Ruspita, M., & Ulfiana, E. (2024). The Effectiveness of Breast Self-Examination Health Education (BSE) using Demonstrations and Lectures on The Level of Knowledge and

- Attitudes of Young Women. *JURNAL KEBIDANAN*, 14(1), 46–53. <https://doi.org/10.31983/jkb.v14i1.7588>
- Kurt, A., & Kayışkiran, B. (2026). Breast cancer and self-examination education: Effects on adolescent knowledge levels. *Health Education Journal*, 85(4), 447–458. <https://doi.org/10.1177/00178969261430609>
- Mahar, B., Osman, M. B., Fauzi, F. A., & Aliyu, S. (2026). The impact of educational interventions on breast self-examination practice, knowledge, and beliefs among women: A systematic review and meta-analysis. *Journal of Public Health Research*, 15(1). <https://doi.org/10.1177/22799036261423725>
- Nurianti, I., & Batubara, J. D. (2025). Efforts to Improve Female Adolescents' Knowledge of Breast Self-Examination (BSE) through Health Promotion Activities at Trisakti Junior High School, Lubuk Pakam. *JURNAL PENGMAS KESTRA (JPK)*, 5(2), 276–281. <https://doi.org/10.35451/4fvv2042>
- Pezzolato, M., Spada, G., Fragale, E., Cutica, I., Masiero, M., Marzorati, C., & Pravettoni, G. (2023). Predictive Models of Psychological Distress, Quality of Life, and Adherence to Medication in Breast Cancer Patients: A Scoping Review. *Patient Preference and Adherence*, Volume 17, 3461–3473. <https://doi.org/10.2147/PPA.S440148>
- Rahayu, E. P., Tonapa, E., & Chifdillah, N. A. (2023). Effectiveness of the breast self-examination demonstration in improving knowledge, attitudes, and behavior of adolescent girls in senior high school in Samarinda. *BKM Public Health and Community Medicine*, 39(09), e10016. <https://doi.org/10.22146/bkm.v39i09.10016>
- Salahshouri, A., Raisi-Philabadi, P., Ghanbari, S., Stein, L., & Araban, M. (2024). Using the health beliefs model to implement mobile puberty health education in Iranian adolescent boys: a randomized controlled trial. *Frontiers in Public Health*, 12. <https://doi.org/10.3389/fpubh.2024.1175262>
- Umanailo, R. (2021). Efektivitas Pendidikan Seks Tentang Perilaku Seks Berisiko Terhadap Tingkat Pengetahuan Siswa Remaja Putri. *Jurnal Keperawatan Tropis Papua*, 4(1). <https://doi.org/10.47539/jktp.v4i1.340>
- Uruntie, R. O., Oputa, C. H., Peters, E., & Otovwe, A. (2024a). Effect of educational intervention on the knowledge, attitude and practice of breast self-examination among female students at a private university in Southern Nigeria. *BMC Cancer*, 24(1), 355. <https://doi.org/10.1186/s12885-024-12116-w>
- Uruntie, R. O., Oputa, C. H., Peters, E., & Otovwe, A. (2024b). Effect of educational intervention on the knowledge, attitude and practice of breast self-examination among female students at a private university in Southern Nigeria. *BMC Cancer*, 24(1), 355. <https://doi.org/10.1186/s12885-024-12116-w>
- Yu, B., Wang, Y., & Chen, X. (2022). Perception of Peer Condom Use Buffers the Associations Between HIV Knowledge, Self-efficacy, and Condom-Use Intention Among Adolescents: a Moderated Mediation Model. *Prevention Science*, 23(6), 879–888. <https://doi.org/10.1007/s11121-021-01324-6>