The Relationship of Knowledge, Attitudes and Behaviors of Young Women About Sadari at SMA Plus Islamic Village, Tangerang Regency

Leni Rosita[1✉]

lenirosita135@gmail.com[1]

[1] Program Studi Keperawatan Program Sarjana, Universitas Cendekia Abditama, Indonesia

✉ **Korespondensi Penulis:** Leni Rosita (email: lenirosita135@gmail.com)

Article Information

ABSTRACT

Breast cancer is one of the leading causes of death in women worldwide. Early detection through Breast Self-Examination (SADARI) can reduce the risk of delayed diagnosis. This study aims to determine the relationship between the level of knowledge, attitudes, and behaviors of adolescent girls about SADARI at SMA Plus Islamic Village, Tangerang Regency. The study used a correlation analytical design with *a cross-sectional* approach on 81 respondents selected through *simple random sampling*. Data was collected using a questionnaire and analyzed with the Chi-Square test. The results showed that 75.3% of respondents had good knowledge, 55.6% had good attitudes, and there was a significant relationship between knowledge, attitudes, and SADARI behavior (p-value = 0.12; p < 0.05). These findings confirm the importance of SADARI education to increase awareness of early detection of breast cancer in adolescent girls

INTRODUCTION

Breast cancer is the most commonly diagnosed cancer in women and remains the leading cause of death globally, with around 2.3 million new cases and 670,000 deaths in 2022. The inequality of disease burden between high- and low/middle-income countries underscores the urgency of early detection connected to comprehensive treatment (World Health Organization [WHO], 2025; International Agency for Research on Cancer [IARC], 2022).

In Indonesia, breast cancer is the most common cancer in women. The GLOBOCAN 2022 estimate reported 66,271 new cases of breast cancer in women; The Ministry of Health's release also highlights the large proportion of cases detected at an advanced stage, thereby aggravating mortality and financing burden (IARC, 2024; Ministry of Health of the Republic of Indonesia [Kemenkes RI], 2022). The national policy framework through Permenkes No. 29/2017 emphasizes three pillars of countermeasures: health promotion, early detection, and governance (Kemenkes RI, 2017).

Early detection includes breast awareness, clinical examination, and mammography screening according to age and risk. In women at average risk, evidence-

based authorities recommend periodic mammography aged 40–74 years; while SADARI/"breast selfawareness" education is useful to encourage vigilance and early symptom reporting (United States Preventive Services Task Force [USPSTF], 2024; Centers for Disease Control and Prevention [CDC], 2024; WHO, 2025).

In terms of prevention, the WCRF/AICR consensus shows strong evidence of the role of a healthy lifestyle in maintaining a healthy weight, being physically active, and limiting alcohol in reducing the risk of breast cancer; this recommendation serves as a reference for policy and public education (World Cancer Research Fund International [WCRF], 2018a; WCRF, 2018b).

Adolescence is a crucial phase in the formation of long-term health behaviors. Evidence in Indonesia shows that SADARI practice is still low nationally (≈43%), with knowledge, attitudes, exposure to information, and family support as important determinants of the practice; school-based educational interventions have been shown to increase adolescents' knowledge and attitudes about SADARI (Azhar et al., 2023; Florentina et al., 2024).

Based on this context, this study aims to analyze the relationship between the level of knowledge, attitudes, and behaviors of adolescent girls about SADARI as early detection of breast cancer at SMA Plus Islamic Village, Tangerang Regency.

RESEARCH METHODS

This study used a correlation analytical design with a *cross-sectional approach* to analyze the relationship between adolescent girls' levels of knowledge, attitudes, and behaviors regarding SADARI (Notoatmodjo, 2018). The research population is all students in grades X and XI of SMA Plus Islamic Village Tangerang Regency which totals 101 people, with a sample of 81 respondents determined using the Slovin formula and *simple random sampling techniques*. The inclusion criteria include female students aged 15–19 years, present during the research, willing to be respondents, and *sign informed consent*, while exclusion criteria are female students who are not willing to be respondents or are not present during data collection. The independent variable in this study is the level of knowledge about SADARI, while the bound variable is the attitude and behavior about SADARI. Data was collected using an online questionnaire (*Google Form*) that has been tested for validity and reliability. Data analysis was carried out univariate to describe the frequency distribution of each variable, and bivariate used the Chi-Square test to determine the relationship between the level of knowledge, attitudes, and behaviors of SADARI with the significance level of $\alpha = 0.05$ (Nashrullah et al., 2023).

**RESULTS AND DISCUSSION**
Result
Univariate Analysis

A total of 81 students became respondents. The majority were aged 16 years (43; 53.1%), followed by 17 years (19; 23.5%), 15 years (17; 21.0%), and 18 years (2; 2.5%) (Table 1). The level of knowledge about SADARI was in the categories of good (61; 75.3%) and adequate (20; 24.7%) (Table 2). Attitudes about SADARI are in the categories of good (45; 55.6%) and adequate (36; 44.4%) (Table 3).

Tabel 1. Age Distribution of Respondents (n = 81)

| No	Age (years)	Quantity (n)	Percentage (%)
1	15	17	21,0
2	16	43	53,1
3	17	19	23,5
4	18	2	2,5
	Total	81	100,0

Figure 1. Age Distribution of Respondents

Age Distribution of Respondents (n = 81)
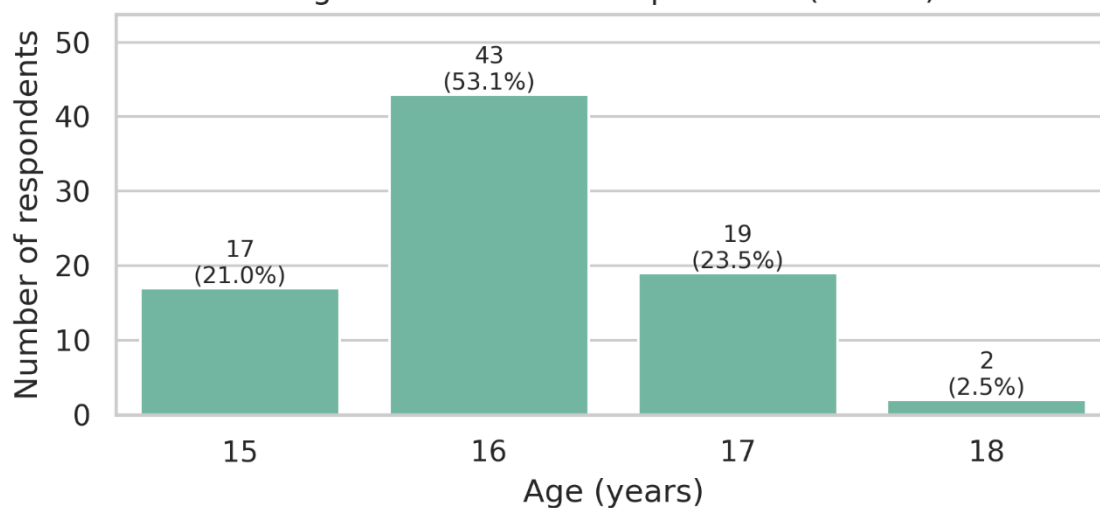
Table 2. Distribution of Knowledge Level about SADARI (n = 81)

Knowledge Categories	Quantity (n)	Percentage (%)
Less	0	0,0
Enough	20	24,7
Good	61	75,3
Total	81	100,0

Figure 2. Knowledge Level about BSE

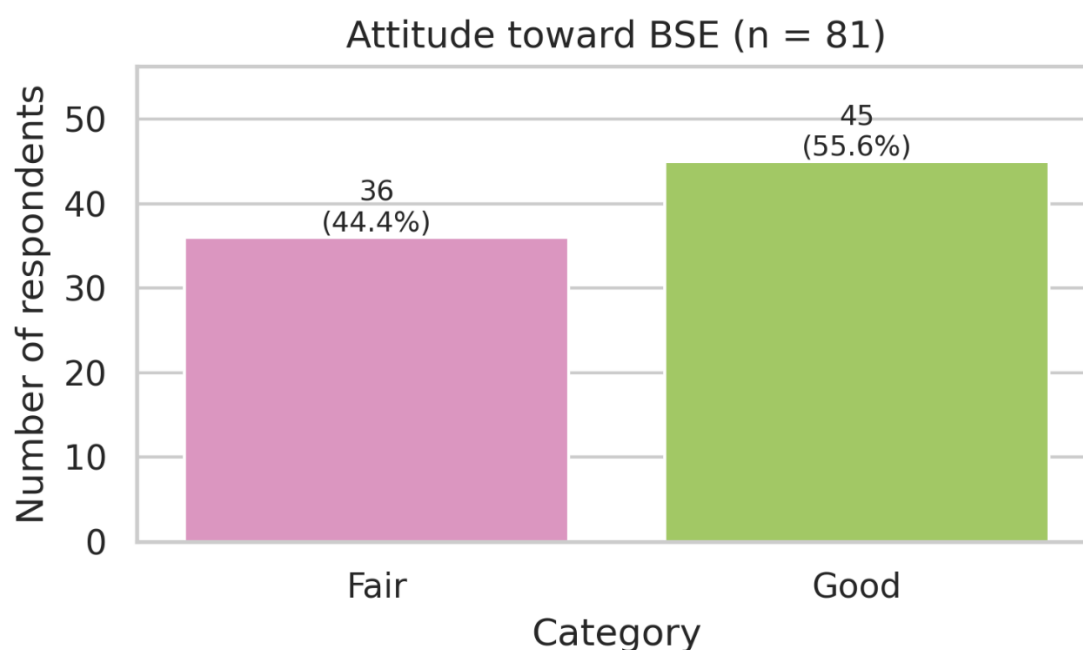
Age Distribution of Respondents (n = 81)
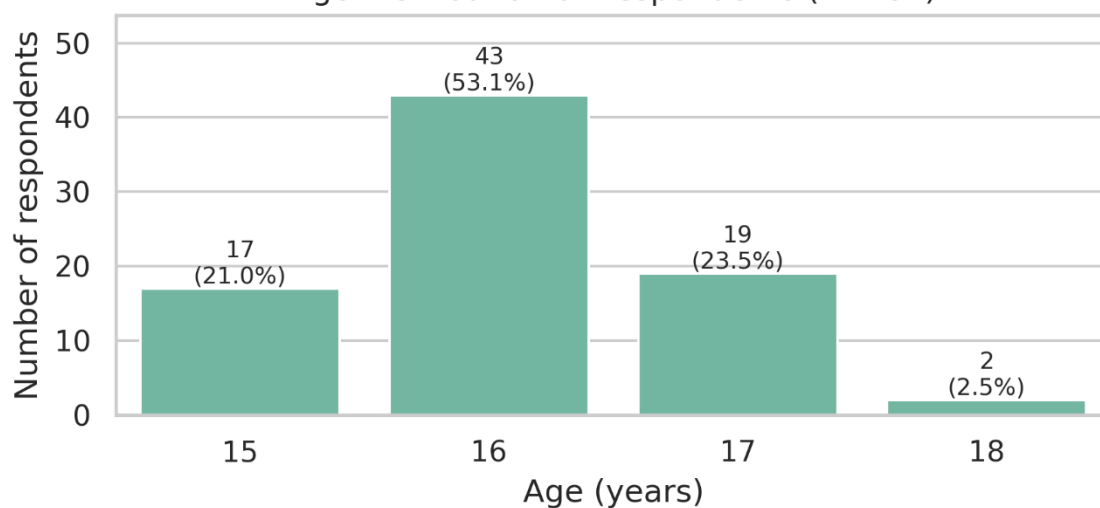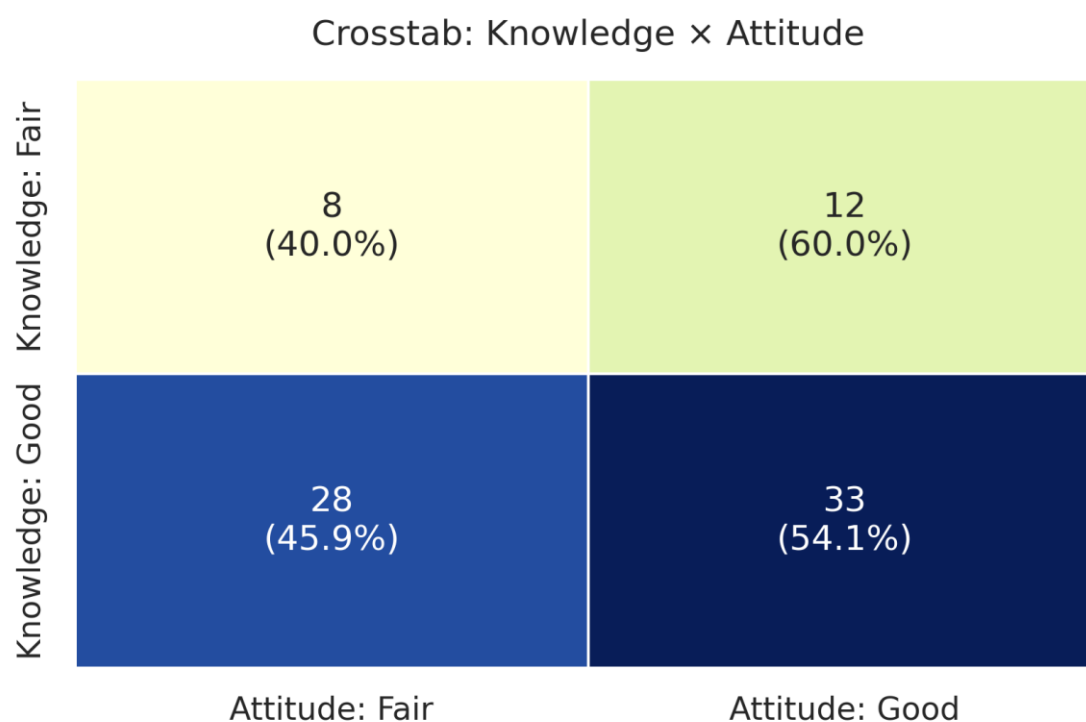
Table 3. Distribution of Attitudes about CONSCIOUS (n = 81)

Attitude/Behavior Category	Quantity (n)	Persentase (%)
Less	0	0,0
Enough	36	44,4
Good	45	55,6
Total	81	100,0

Figure 3. Attitude toward BSE

Figure 4. Crosstab: Knowledge × Attitude (heatmap + chi-square)

ıtes): χ²(1) = 0.212, p = 0.645 | Yates correction: χ²(1) = 0.041, p

Bivariate Analysis

The relationship between knowledge (adequate/good) and attitude (adequate/good) is shown in Table 4. ChiSquare's test results from tabulation 2×2 showed no meaningful relationship between knowledge level and attitude:

No Yates correction: $\chi^2(1) = 0.212$, $p = 0.645$

With Yates correction: $\chi^2(1) = 0.041$, $p = 0.840$

Effect size $\phi = 0.051$ (very small)

Table 4. The Relationship of Knowledge and Attitudes about AWARENESS (2×2; n = 81)

Knowledge	Enough Attitude n (%)	Kindness n (%)	Total
Enough	8 (40,0)	12 (60,0)	20 (100,0)
Good	28 (45,9)	33 (54,1)	61 (100,0)
Total	36 (44,4)	45 (55,6)	81 (100,0)

Sync note: The p-value in the previous script (0.12) is inconsistent with the table. Recalculations on the available tabulations show insignificant (see p-value above).

Discussion

Age profile and context of early detection urgency

The composition of the respondents was dominated by middle adolescents (aged 16–17 years). This is relevant because long-term health habits are formed a lot in this phase. Globally, breast cancer remains a major burden: ≈2.3 million new cases and ≈670,000 deaths in 2022; WHO emphasizes the importance of timely diagnosis integrated with comprehensive treatment to reduce mortality.

Implications: School education needs to emphasize awareness of breast changes (e.g., lumps, nipple retraction, skin changes) as well as access to services if there are symptoms; Meanwhile, mammography screening is only relevant when entering the adult age group, according to screening guidelines.

Higher knowledge is not enough to change attitudes

The proportion of good knowledge (75.3%) indicates relatively good exposure to information. However, good attitudes were only 55.6% and were not significantly associated with knowledge ($\phi \approx 0.05$). This reflects a "KAP gap" knowledge does not automatically transform into attitudes/intentions to act. *A national meta-analysis* shows that the practice of SADARI in Indonesia is still ≈43%, and knowledge, attitudes, exposure to information, and family support are important determinants of practice.

Implications: Interventions in schools do not focus enough on cognitive material; It must be added to strengthen self-efficacy, peer norms, and family support so that there is translation to behavior. Evidence of adolescent intervention shows that structured education is able to increase knowledge and attitudes towards SADARI.

Placement of findings within the framework of the guidelines

In policy/clinical frameworks, evidence-based authorities do not recommend BSE/SADARI as routine screening, but rather emphasize breast selfawareness and age/risk-based mammography screening (USPSTF: 40–74 years of age biannually; CDC aligns). In line with primary prevention, the WCRF/AICR emphasizes the importance of healthy weight, physical activity, and alcohol restriction to lower the risk of breast.

Strengths, limitations, and directions of advanced research

Strengths: Focus on the adolescent population a key phase of shaping health behaviors. Limitations: (i) Cut latitude → does not infer causal; (ii) Instruments have not been reported metrics (CVI/CVR; Cronbach's α; Categorization cutoffs); (iii)

Reporting bias (selfreport *Google Form*); (iv) One school → limited generalization; (v) The "behavioral" variable is mentioned in the objective, but the behavioral data/analysis is not displayed.

CONCLUSIONS AND SUGGESTIONS
Conclusion
Research on 81 students of SMA Plus Islamic Village showed that the level of knowledge about SADARI was in the good category (75.3%), while the attitude was in the good category (55.6%). The ChiSquare test on cross-tabulation of knowledge × attitude yielded $p > 0.05$ (χ^2 without correction = 0.212; p = 0.645; ϕ = 0.051), which means that there is no meaningful relationship between knowledge and attitude. Thus, the purpose of the study to examine the relationship between knowledge and attitudes showed no significant association in the adolescent population studied.

These findings confirm the existence of a KAP (knowledge attitude practice gap): high knowledge has not automatically transformed into a positive attitude. Substantively, the results indicate the need for an educational approach that not only increases knowledge, but also builds self-efficacy, supportive peer norms, and a clear referral path when symptoms are found. The limitations of the study include cross-sectional design, incomplete reporting of instruments (validity reliability, *category cutoffs*), and the scope of one school, so generalizations need to be careful and further research is recommended.

Suggestion
For schools and stakeholders: Integrate breast awareness education and seeking early help if there are changes/complaints, through skills-based approaches (demonstrations, structured exercises, feedback), peer role models, and family involvement. Complete the material with healthy lifestyle components (physical activity, weight management, no/limit alcohol) and a referral flow to health services. Develop simple monitoring indicators (e.g., the proportion of female students who can name warning signs and know the referral flow) so that capacity building can be monitored over time.

For researchers and manuscript compilers: (1) Improve the consistency of the manuscript adjust the abstract and conclusion to "there is no meaningful relationship between knowledge and attitude (p > 0.05)" and standardize the percentage (good knowledge 75.3%; good attitude 55.6%). (2) If behavioral/practice variables are collected, display the distribution and conduct a knowledge test × behavior and/or attitude × behavior; If it's not available, delete the associated claim. (3) Report validity (CVI/CVR), reliability (Cronbach's α), and category limits used. (4) Consider multivariate analyses (e.g., logistic regression), larger sample sizes, and longitudinal or quasi-experimental designs to evaluate the impact of educational interventions on changes in attitudes and practices more robustly.

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