

CORRELATING HEALTH KNOWLEDGE AND ATTITUDES WITH FIBROADENOMA MAMMAE PREVENTION AWARENESS IN ADOLESCENTS

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ABSTRACT

Background: Breast Fibroadenoma (FAM) is the most common benign breast tumor found among adolescent girls due to hormonal fluctuations during growth. Despite its benign nature, the tumor causes significant psychological anxiety and carries a high risk of delayed medical intervention due to a profound lack of early preventive awareness within the school environment. **Objectives:** This study aimed to analyze the relationship between health knowledge and attitudes with the awareness of Breast Fibroadenoma prevention among adolescent girls at SMAN 5 Seluma. **Methods:** A descriptive-analytic study with a cross-sectional design was conducted, involving 30 respondents selected through purposive sampling. Data were collected using structured questionnaires and analyzed quantitatively through univariate and bivariate analyses using Fisher's Exact Test. **Results:** Univariate analysis revealed that although the majority of respondents possessed good knowledge (70%) and positive attitudes (60%), 56.7% had not taken any actual preventive actions against FAM. Bivariate analysis demonstrated a significant association between knowledge and preventive awareness (p-value=0.042), as well as a significant association between health attitudes and preventive awareness (p-value=0.002). **Conclusions:** Adequate knowledge and positive health attitudes are critical factors that play an essential role in improving adolescents' awareness toward the prevention and early detection of breast abnormalities through Breast Self-Examination (BSE/SADARI). Routine reproductive health education programs and integrated media interventions in schools are urgently required to optimize adolescents' preventive behaviors.

Keywords: Adolescent; Attitude; Breast Self-Examination; Fibroadenoma Mammae; Knowledge

INTRODUCTION

Breast Fibroadenoma (FAM) is the most common benign breast tumor found among adolescents and young women. Fibroadenoma typically occurs between the ages of 10 and 18 due to hormonal influences during growth (Abidin 2024). Breast Fibroadenoma also serves as one of the primary causes of breast lumps in young women and can elevate the risk of future breast disorders if early detection and prevention are not initiated during adolescence (Mesakh et al. 2024). Adolescence is characterized by rapid biological development, driven in part by fluctuations in estrogen hormones that influence breast tissue proliferation. The most common benign pathological condition found in this phase is Breast Fibroadenoma (FAM). Epidemiologically, FAM accounts for approximately 44–68% of all breast biopsy cases in adolescent girls, making it a reproductive health issue that urgently needs to be addressed early (Pandit et al. 2023). Despite its benign nature, the presence of this tumor causes significant psychological anxiety for adolescents and carries the potential to trigger destructive complications if not detected from the early stages (Mesakh et al. 2024). A study by Oktaviany *et al.*, (2024) noted that the majority of adolescent girls still possess less-than-optimal knowledge regarding the early detection of breast lumps. Research on adolescent girls at SMAN 1 Gantar showed that while 61% of respondents had good knowledge about Breast Fibroadenoma, motivation to perform Breast Self-Examination (BSE/SADARI) remained in the moderate category at 55%. However, many adolescents still have poor knowledge and negative attitudes toward the prevention of breast lumps. Some adolescents perceive breast lumps as an issue that only occurs in adult women, leading to a neglect of the importance of early detection. Insufficient reproductive health education also results in adolescents not understanding how to care for their breast health properly. This condition can increase the risk of delayed intervention if abnormalities are found in the breast. Therefore, this study aims to prove the hypothesis that there is a significant relationship between health knowledge and attitudes with the awareness of breast fibroadenoma prevention among adolescents.

METHODS

This study employed an analytical observational research design with a cross-sectional approach. The research population comprised all high school female adolescents at SMAN 5 Seluma, totaling 90 students. The sample size was calculated using the Slovin formula with a 15% margin of error, yielding a minimum requirement of 30 participants (Putri & Nuzuliana, 2020). A purposive sampling technique was applied to select 120 respondents based on the inclusion criteria: (1) active female students aged 15–18 years, (2) willing to participate as respondents and signed the informed consent form (along with parental/guardian consent), and (3) had never received formal BSE (Breast Self-Examination / *SADARI*) training before. The exclusion criteria were: (1) students currently undergoing active treatment for breast tumors/cancer, and (2) students who were absent during data collection due to illness.

The independent variables in this study were knowledge, defined as the cognitive outcomes of the female adolescents after perceiving or receiving education regarding benign breast tumors, specifically Fibroadenoma Mammae (FAM), and attitude, which represents the response, readiness, or affective evaluation (emotional and behavioral tendencies) of the adolescents toward the prevention and early detection of Fibroadenoma Mammae. Attitude does not yet constitute an actual action, but rather a behavioral predisposition. The dependent variable was the prevention of fibroadenoma mammae (performing BSE), defined as the behavior or awareness of female adolescents in practicing breast self-examination regularly and using the correct technique.

Data were analyzed quantitatively. Univariate analysis was used to describe the characteristics of the sample, while bivariate analysis using the Chi-square test was performed to test the research hypotheses. This study adopted the standard anthropometric assessment methods recommended by the Ministry of Health of the Republic of Indonesia. Ethical clearance for this research involving human subjects was officially granted by the Health Research Ethics Committee of Universitas Jambi (Certificate Number: 4106/UN21.8/PT.01.04/2026, Approved on March 10, 2026).

RESULT

Respondent Characteristics

Tabel 1 presents the relationship between knowledge and attitudes with the awareness of Fibroadenoma Mammae Prevention.

Tabel 1. Respondent characteristics based on knowledge and attitudes with the awareness of Fibroadenoma Mammae Prevention

Group	Fibroadenoma Mammae Prevention		Chi-Square
	Melakukan n (%)	Tidak Melakukan n (%)	
Knowledge			
Good	12 (57,1)	9 (42,9)	0.042
Poor	1 (11,1)	8 (88,9)	
Attitudes			
Positive	12 (66,7)	6 (33,3)	0.002
Negative	1 (8,3)	11 (91,7)	

Based on Table 1, adolescents with good knowledge are better at performing fibroadenoma mammae prevention (57.1%). The prevalence of knowledge is significantly associated with performing fibroadenoma mammae prevention ($p = 0.042$). Attitude also shows a statistically significant relationship with the prevention of fibroadenoma mammae ($p = 0.002$).

DISCUSSION

The results of this study indicate that there is a significant relationship between knowledge and the awareness of Fibroadenoma Mammae prevention among adolescents. This finding demonstrates that knowledge plays a critical role in shaping adolescents' awareness of breast health and early detection efforts for breast abnormalities. Knowledge is the outcome of an individual's sensory perception of information, which can directly influence the formation of health behaviors. Adolescents who possess good knowledge regarding breast health tend to better understand the importance of maintaining reproductive health, conducting early detection, and implementing preventive behaviors against breast lumps. Conversely, a lack of knowledge causes adolescents to be less aware of the critical need for early prevention. The findings of this study align with the Knowledge-Attitude-Practice (KAP) model, which states that knowledge serves as the foundation for the formation of an individual's health attitudes and behaviors (Pandit et al. 2023).

The results of this research are also consistent with the study by Windayanti and Widayati (2023), which stated that there is a significant correlation between knowledge and BSE (*SADARI*) attitudes among adolescent girls. Adequate knowledge regarding breast health helps adolescents develop awareness and positive behaviors in conducting early detection of breast abnormalities. Furthermore, this study is supported by the research of Christina Aquilera Sihotang et al. (2025), which indicated that the low implementation of BSE among adolescents is influenced by a lack of knowledge and positive attitudes toward breast health. Adolescents who comprehend the importance of early detection tend to be more aware of taking independent preventive actions.

In addition, a study by Sri Ayu Nata et al. (2024) also demonstrated a significant relationship between knowledge and BSE behavior among female adolescents at SMK Negeri 3 Pangkep, with a p-value of 0.001. That study explained that adolescence is a pivotal period for shaping healthy behaviors that persist into adulthood, making health education vital for increasing awareness of early breast cancer detection.

Nevertheless, this study still identified respondents who possessed good knowledge but had not yet practiced Fibroadenoma Mammae prevention. This discrepancy can be influenced by other factors, such as a lack of motivation, feelings of embarrassment, fear of discovering an abnormality in the breast, as well as minimal environmental support and limited access to reproductive health information. Therefore, continuous health education in schools is highly required to ensure that adolescents better understand the crucial importance of preventing and detecting breast lumps from an early age.

The results of this study also demonstrate that there is a significant relationship between attitude and the awareness of Fibroadenoma Mammae prevention among adolescents. This outcome indicates that a positive attitude can enhance adolescents' awareness of taking preventive steps against breast lumps. An attitude is an individual's internal response to an object, which can influence health actions and behaviors. Adolescents who exhibit a positive attitude toward the importance of maintaining breast health tend to be more motivated to engage in preventive behaviors, such as seeking health information, maintaining a healthy

lifestyle, and performing Breast Self-Examination (BSE/*SADARI*). On the other hand, a negative attitude causes adolescents to be indifferent toward breast health, resulting in suboptimal preventive efforts (Nata, Asrul, and Anisah 2024).

These findings are in line with research by Mestiara et al. (2022), which stated that there is a significant relationship between attitudes and the perception of BSE among adolescent girls. Their study explained that adolescents with positive attitudes hold a better perception of the importance of early breast cancer detection through BSE (Mestiara, Arlianti, and Ariscasari 2023). Another study by Aulia (2025) also showed a significant correlation between the level of knowledge and attitudes toward BSE examination among adolescent girls at SMAN 7 Makassar, with a p-value of 0.000. A positive attitude held by adolescents will positively influence health behaviors and enhance awareness to conduct early detection of breast abnormalities.

Moreover, research by Yusuf et al. (2025) stated that attitude and self-motivation are significantly associated with BSE practice among adolescent girls at SMA Negeri 4 Kabupaten Enrekang. Peer support and the school environment also play a vital role in shaping adolescents' health behaviors regarding early breast cancer detection.

Although the majority of respondents exhibited a positive attitude, there were still adolescents who had not implemented Fibroadenoma Mammae prevention. This indicates that health behavior is not solely influenced by attitudes, but is also driven by other factors such as family support, cultural habits, social environments, and exposure to health information. Consequently, a routine and engaging reproductive health education program within the school environment is urgently required to foster positive attitudes and elevate adolescents' awareness regarding the importance of early Fibroadenoma Mammae prevention

CONCLUSIONS

Fibroadenoma Mammae (FAM) is a benign breast tumor that commonly affects adolescents due to hormonal fluctuations during growth. Although benign, the presence of this tumor frequently triggers psychological anxiety and carries a risk of delayed medical intervention due to a profound lack of preventive awareness. This phenomenon is evidenced by the research results, which reveal that the majority of adolescent girls (56.7%) have not taken any actual preventive actions or early detection measures for breast abnormalities. The primary factors proven to contribute strongly to the construction of preventive awareness for this tumor rest within the cognitive (knowledge) and affective (attitude) domains. Therefore, FAM prevention efforts require integrated interventions through routine reproductive health education programs within the school environment. Elevating preventive awareness can be optimized through the strategic use of information media (such as leaflets, posters, and educational videos) alongside practical training for Breast Self-Examination (BSE/*SADARI*). With appropriate early education and intervention, the psychological barriers faced by adolescents can be overcome, enabling them to grow healthily, productively, and optimally in the future.

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CONFLICT OF INTEREST AND FUNDING DISCLOSURE

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AUTHOR CONTRIBUTIONS

NRNN: conceptualization, data curation, investigation, methodology, formal analysis, validation, visualization, writing original draft, writing review and editing.

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