RESEARCH ARTICLE

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Barriers to Cervical Cancer Screening through Pap Smear Examination among Women Attending the Gynecology Polyclinic at Dr. Zainoel Abidin General Hospital in 2024: A Cross-Sectional Study

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Abstract

Background: Cervical cancer remains the fourth most common cancer among women globally and a leading cause of cancer-related mortality in low- and middle-income countries (LMICs). Despite the availability of effective screening methods such as the Pap smear, screening uptake remains suboptimal. Barriers such as limited awareness, socioeconomic challenges, cultural beliefs, and inadequate access to healthcare services contribute to this gap. Identifying these factors is essential to inform effective interventions and reduce cervical cancer mortality. **Objective:** This study aimed to identify the barriers and facilitators associated with Pap smear screening uptake among women attending the Gynecology Clinic at Dr. Zainoel Abidin General Hospital, Banda Aceh. **Methods:** A cross-sectional study was conducted in 2024 involving 200 female outpatients. Data were collected using structured questionnaires based on the Health Belief Model to evaluate personal, cultural, and social factors influencing screening behavior. Descriptive statistics, chi-square tests, and binary logistic regression analyses were performed to determine significant predictors of Pap smear uptake. **Results:** Although 49.5% of participants were aware of Pap smear screening, only 11.5% had undergone the procedure. Barriers identified included low educational attainment, limited monthly income, cultural misconceptions, and lack of spousal support. Logistic regression analysis revealed that perceived benefits (OR = 1.937; 95% CI: 1.011–3.711), self-efficacy (OR = 2.143; 95% CI: 1.088–4.222), positive attitudes toward screening (OR = 2.637; 95% CI: 1.386–5.017), and spousal support (OR = 2.084; 95% CI: 1.074–4.043) were significant predictors of Pap smear utilization.**Conclusion:** Socioeconomic barriers, negative attitudes, low self-efficacy, and insufficient spousal support substantially hinder Pap smear screening among women in this setting. Comprehensive interventions that incorporate community education, culturally sensitive approaches, and family engagement strategies are urgently needed to improve screening uptake and support cervical cancer prevention efforts in resource-limited areas.

Keywords: Pap smear- cervical cancer- screening barriers- self-efficacy- social support

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Introduction

Cervical cancer is the fourth most common cancer among women worldwide, with an estimated 570,000 new cases and 311,000 deaths reported in 2018 alone [1]. The disease disproportionately affects women in low- and middle-income countries (LMICs), accounting for nearly 90% of global cervical cancer mortality due to limited access to screening and healthcare services [2]. Sub-Saharan Africa and South Asia, including Indonesia, bear the highest burden of the disease [3]. In Indonesia, cervical cancer ranks as the second most prevalent cancer among women, with an estimated incidence rate of 23.4 per 100,000 women, contributing significantly to the high national mortality rate [4, 5].

Despite being a largely preventable disease, numerous barriers hinder the effective implementation and uptake of cervical cancer screening programs in LMICs [6-9]. At the individual level, lack of awareness about cervical cancer and its risk factors, fear of a positive diagnosis, and cultural beliefs around modesty and gender roles contribute significantly to the low uptake of screening services [10-12]. In many communities, women may be reluctant to undergo a Pap smear due to discomfort with male healthcare providers or misconceptions that the procedure is unnecessary unless symptoms are present [13-15]. Additionally, fear and stigma surrounding cancer diagnoses may deter women from seeking screening or returning for follow-up care [16-18].

On a systemic level, barriers such as inadequate

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healthcare infrastructure, shortage of trained personnel, and limited availability of screening services further contribute to the low uptake of cervical cancer screening [19-21]. In many LMICs, including Indonesia, screening programs are not widely accessible, especially in rural areas, due to lack of facilities, high patient volumes, and low staff-to-patient ratios [22-24]. Organizational challenges such as long wait times, inconsistent service availability, and poor communication between healthcare providers and patients can exacerbate these issues, leading to patient frustration and attrition from screening programs [25-27].

Socioeconomic factors also play a crucial role in determining access to cervical cancer screening [28]. Women from lower socioeconomic backgrounds may face difficulties in affording transportation to screening facilities or in taking time off from work to attend appointments [29, 30]. Additionally, hidden costs associated with diagnostic follow-up or private screening services often place these services out of reach for many women [31]. The lack of public awareness campaigns and insufficient integration of cervical cancer screening into primary healthcare services further contribute to the gap in service utilization between high- and low-income populations [32].

Strategies to overcome these barriers include community-based education programs to increase awareness and reduce stigma, integrating screening services into existing maternal and child health programs, and training more healthcare providers to offer screening services. Implementing culturally appropriate educational interventions and addressing misconceptions through trusted community health workers can significantly improve screening uptake [33, 34].

In the context of Aceh, Indonesia, where traditional cultural norms strongly influence healthcare-seeking behaviors, understanding these barriers is critical for developing effective public health interventions. This study aims to explore the barriers to Pap smear examination for cervical cancer screening among women visiting the Gynecology Clinic at Dr. Zainoel Abidin General Hospital, Banda Aceh. By identifying these barriers, this research seeks to provide insights that can be used to inform targeted strategies to enhance screening uptake and reduce the burden of cervical cancer in the region.

Materials and Methods

This study employed an observational analytic design using a cross-sectional approach. It aimed to evaluate the factors that influence cervical cancer prevention behaviors among women of reproductive age attending the Gynecology Clinic at Dr. Zainoel Abidin General Hospital, Banda Aceh. Data were collected at a single point in time, without any follow-up, to measure the associations between independent variables (such as personal, interpersonal, and situational factors) and the dependent variable (cervical cancer prevention behaviors).

The study was conducted at Dr. Zainoel Abidin General Hospital, Banda Aceh, in 2024. Ethical approval was obtained from the Research Ethics Committee of Universitas Syiah Kuala with the number 178/ETIK-RSUDZA/2024. Informed consent was acquired from all participants prior to their inclusion in the study, and all procedures followed ethical standards for human research.

The target population included all female patients visiting the Gynecology Clinic at RSUDZA during the study period. Using Slovin's formula and assuming a precision level of 5%, the calculated minimum sample size was 187 participants. To account for a potential dropout rate of 10%, the final sample size was set at 200 respondents.

The study applied the following inclusion criteria: women who were literate and living in the same household as their husbands. Exclusion criteria included women who had been diagnosed with cervical cancer or had a mental health disorder. Sampling was conducted using a total sampling method, including all women who met the inclusion criteria.

Data were collected using structured questionnaires designed based on the Health Promotion Model. Personal factors such as age, perceived health status, and cultural beliefs were measured using a 5-point Likert scale. Other factors like perceived benefits and barriers to preventive actions, perceived self-efficacy, and interpersonal influences such as husband support were also measured using validated scales. The questionnaires were pre-tested for validity and reliability, with Cronbach's alpha values above 0.70 considered satisfactory.

The data collection procedure began with the identification of eligible participants. After obtaining informed consent, the questionnaires were distributed, and research assistants were available to provide clarification and assistance to ensure accurate completion. After collection, questionnaires were reviewed for completeness and consistency. Participants were given a small token of appreciation for their participation.

Data analysis was performed using descriptive and inferential statistics. Descriptive analysis was used to summarize the characteristics of the study population, while bivariate analysis was conducted using chi-square tests to assess the relationship between independent and dependent variables. Logistic regression analysis was used to identify the strongest predictors of cervical cancer prevention behaviors, with a significance level set at $p < 0.05$.

All participants were treated in accordance with ethical guidelines, and confidentiality was maintained throughout the study. Informed consent was obtained, and no identifying information was included in the final report.

Results

Demographic Distribution of Respondents

The demographic characteristics of the 200 female participants visiting the Gynecology Clinic at Dr. Zainoel Abidin General Hospital show that the largest proportion falls within the age group of 36-45 years (50.5%), followed by the 26-35 years age group (29.5%). Only 8.5% of the participants were aged 17-25 years, and 11.5% were aged 46-55 years. This distribution suggests that most of the

patients seeking gynecological services at the hospital are within the mid-reproductive to pre-menopausal age range. Educational background varied among the participants. The majority had completed high school (33.5%), while 24% had finished middle school. Participants with elementary education and those with higher education were 16.5% and 26%, respectively. This indicates a fairly diverse educational profile among the women attending the clinic.

Regarding occupation, the majority were unemployed (42.5%), followed by entrepreneurs (20.5%), farmers (15%), government employees (11.5%), and private-sector employees (10.5%). The high percentage of unemployed participants may reflect socioeconomic factors that influence healthcare-seeking behavior and access to screening services. In terms of income, 42.5% of participants reported earning between 1-3 million IDR monthly, while 38.5% earned less than 1 million IDR. Only 19% of participants had an income exceeding 3 million IDR. This distribution highlights the economic challenges faced by many women, potentially influencing their ability to seek and undergo healthcare procedures like the Pap smear test (Table 1).

Table 1. Demographical Characteristics of the Respondent

Characteristics	Frequency (n)	Percentage (%)
Age		
17-25 years	17	8.50%
26-35 years	59	29.50%
36-45 years	101	50.50%
46-55 years	23	11.50%
Education		
Elementary School	33	16.50%
Middle School	48	24%
High School	67	33.50%
Higher Education	52	26%
Occupation		
Government Employee	23	11.50%
Private Sector	21	10.50%
Entrepreneur	41	20.50%
Unemployed	85	42.50%
Farmer	30	15%
Income		
< 1 million IDR	77	38.50%
1-3 million IDR	85	42.50%
> 3 million IDR	38	19%
Marital History		
Ever Married	200	100%
Pregnancy History		
Never Pregnant	14	7%
1-2 times	82	41%
3-4 times	77	38.50%
5-6 times	23	11.50%
> 6 times	4	2%

Pap Smear and Source of Information

Among the participants, 53% had received information about Pap smear screening, while 47% had never been informed about it. This finding underscores the need for better dissemination of information regarding cervical cancer screening.

For those who were aware, the primary source of information was healthcare workers (49.5%), followed by mass media (32.5%) and family or friends (15.5%). A small proportion (2.5%) received information from other sources. These results suggest that healthcare professionals play a critical role in educating women about cervical cancer prevention and screening, making them a key target group for further education and training initiatives. Despite over half of the participants having received information about Pap smear screening, only 11.5% had actually undergone the procedure, while the vast majority (88.5%) had never had a Pap smear (Figure 1). This stark contrast highlights a gap between awareness and actual behavior, suggesting the presence of other barriers that prevent women from participating in screening, such as cultural attitudes, perceived barriers, or lack of access to healthcare facilities (Figures 2, 3).

Family History of Cervical Cancer

Only 9.5% of the participants reported having a family history of cervical cancer, whereas 90.5% had no family history. This finding indicates that most participants do not have a direct familial risk factor for cervical cancer, which could potentially reduce their perceived susceptibility and willingness to engage in preventive measures like Pap smear screening (Figure 4).

Influence of Attitudes, Perceptions, and Support Systems on Cervical Cancer Screening Behavior

Influence of Attitudes, Perceptions, and Support Systems on Cervical Cancer Screening Behavior The attitudes and perceptions of participants toward cervical

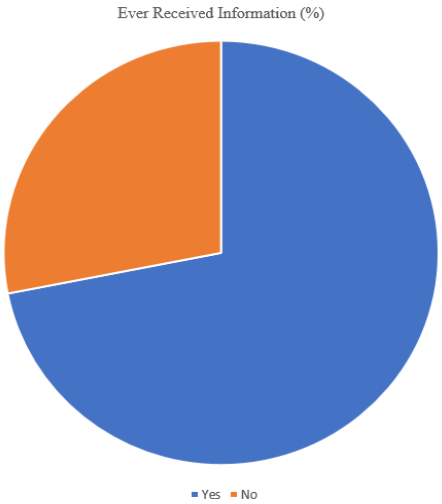

Figure 1. Characteristic based on Ever Received Information of the Respondent

Table 2. Chi-Square Test for Bivariate Analysis

Variable	Chi-square Value	df	p-value
Age	21.75	3	0.537
Health Status	3.661	1	0.056
Cultural Influence	5.84	1	0.445
Perceived Benefits	9.003	1	0.003*
Perceived Barriers	9.225	1	0.002*
Self-Efficacy	14.927	1	0.000*
Attitude Towards Screening	12.051	1	0.001*
Husband's Support	8.341	1	0.004*
Situational Influence	9.832	1	0.002*

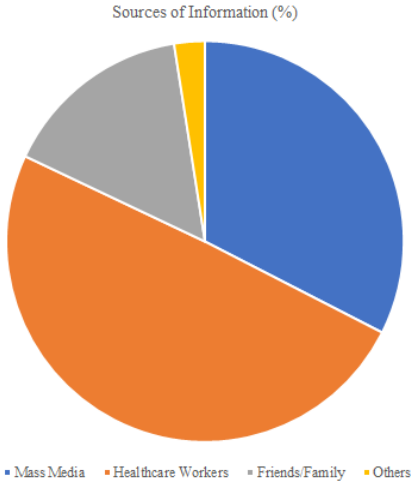

Figure 2. Characteristic based on Sources of Information of the Respondent

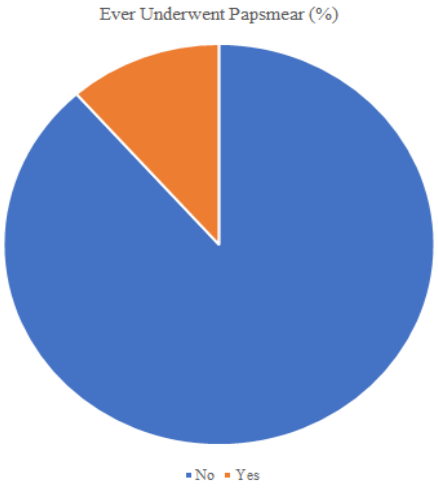

Figure 3. Characteristic based on Sources of Information of the Respondent

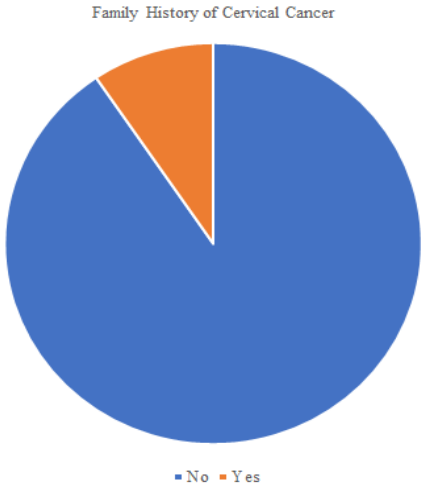

Figure 4. Finding on Family History of Cervical Cancer of the Respondent

cancer screening were evaluated across multiple domains. A significant proportion of participants (71%) perceived their health status as positive, while 29% viewed their health negatively. Cultural influence also played a substantial role, with 76% of participants having a positive cultural outlook toward screening, whereas 24% reported negative cultural influences, indicating that cultural beliefs

Table 3. Logistic Regression Test for Determine the Factor associated the most to Pap Smears Screening Behavior

Variable	B	SE	Wald	df	p-value	Exp(B)	95% CI for Exp(B)
Perceived Benefits	0.661	0.332	3.97	1	0.046	1.937	1.011 – 3.711
Perceived Barriers	0.511	0.355	2.074	1	0.15	1.667	0.832 – 3.343
Self-Efficacy	0.762	0.346	4.858	1	0.028	2.143	1.088 – 4.222
Attitude Towards Screening	0.969	0.328	8.722	1	0.003	2.637	1.386 – 5.017
Husband's Support	0.734	0.338	4.717	1	0.03	2.084	1.074 – 4.043
Situational Influence	0.525	0.344	2.331	1	0.127	1.69	0.862 – 3.316
Constant	-5.816	1.118	27.056	1	0	0.003	–

Table 4. Logistic Regression with Interaction Term (Self Efficacy × Husband Support).

Variable	B	SE	Wald	df	Sig.	Exp(B) (OR)	95% CI for Exp(B)
Self Efficacy (Positif)	0.6	0.34	3.12	1	0.077	1.82	0.94 – 3.52
D. Suami (Positif)	0.65	0.36	3.26	1	0.071	1.91	0.91 – 4.02
Self Efficacy × D. Suami	0.88	0.39	5.11	1	0.024	2.41	1.13 – 5.14
Constant	-5.6	1.12	24.98	1	0	0.004	–

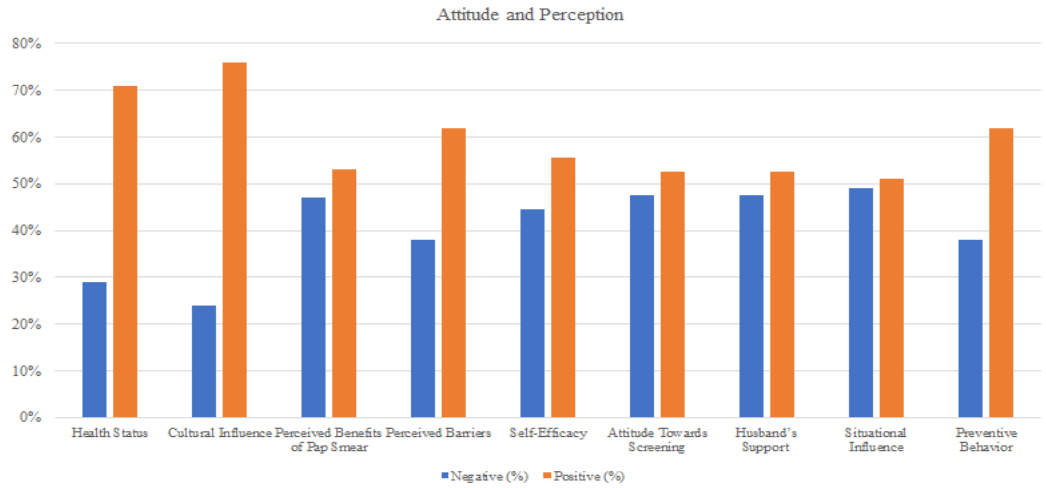

Figure 5. Attitude and Perception Respondent towards Screening

are a crucial determinant of screening behavior. When considering perceived benefits, only 53% recognized the advantages of Pap smear screening, and 47% viewed them as low, highlighting the need for enhanced health education to increase awareness about the benefits of early detection (Figure 5).

Regarding perceived barriers, 62% of participants reported low barriers to screening, which suggests a relatively favorable view of accessibility and acceptance. However, 38% still faced considerable obstacles, indicating room for intervention to reduce these barriers. Self-efficacy was found to be a key factor, as 55.5% of participants expressed high confidence in their ability to engage in preventive behaviors, while 44.5% lacked confidence in their capacity to participate in screening. In terms of attitudes toward screening, 52.5% of participants had a positive attitude, while 47.5% exhibited a negative attitude, reflecting the presence of reservations or concerns about the procedure.

Spousals support was similarly distributed, with 52.5% of participants receiving positive spousal support, while 47.5% did not. This highlights the critical role of family and spousal support in encouraging women to participate in screening. Additionally, 51% of participants perceived situational factors such as healthcare access and convenience as supportive, whereas 49% found these factors to be barriers. As for preventive behavior, 62% of participants demonstrated positive preventive behaviors, such as undergoing screening, while 38% exhibited negative behaviors, suggesting a need for targeted health promotion strategies to improve screening uptake.

The chi-square tests used to analyze relationships between variables and preventive behaviors revealed significant associations with perceived benefits ($p = 0.003$), perceived barriers ($p = 0.002$), self-efficacy ($p = 0.000$), attitude toward screening ($p = 0.001$), husband's support ($p = 0.004$), and situational influence ($p = 0.002$). However, no significant relationships were found for variables such as age, health status, and cultural influence, suggesting that these factors might not directly impact screening behavior within this population (Table 2).

Logistic regression analysis identified the most influential factors associated with Pap smear screening behavior. Women who perceived higher benefits were nearly twice as likely to undergo screening (OR = 1.937). Those with higher self-efficacy were more than twice as likely to participate in screening (OR = 2.143). Similarly, positive attitudes toward screening significantly increased the likelihood of participation (OR = 2.637). Husband's support was also a determining factor, doubling the odds of undergoing screening (OR = 2.084). These findings underscore the importance of enhancing perceived benefits, self-efficacy, attitudes, and husband's support in future health promotion programs aimed at improving Pap smear screening rates among women in this region (Table 3).

To further examine potential interaction effects between key psychosocial factors, an additional logistic regression model was constructed incorporating an interaction term between self-efficacy and husband's support. The interaction was statistically significant (OR = 2.41; 95% CI = 1.13–5.14; $p = 0.024$), suggesting that women who reported both high self-efficacy and strong spousal support were more than twice as likely to undergo Pap smear screening compared to those with only one or neither factor. This finding highlights the importance of considering the synergistic effects of psychosocial and familial support in designing targeted interventions. These results are presented in Table 4.

Discussion

The findings of this study provide a comprehensive understanding of the barriers and facilitators influencing cervical cancer screening behaviors among women attending the Gynecology Polyclinic at Dr. Zainoel Abidin General Hospital in 2024. The discussion addresses key themes: demographic and socioeconomic influences, awareness versus behavior gaps, psychosocial determinants, cultural and situational factors, family history, and implications for health promotion strategies. Each theme is supported by recent studies and contextualized within the local setting.

The predominance of women aged 36–45 years (50.5%)

highlights the mid-reproductive to pre-menopausal age group as the primary demographic seeking gynecological services. This finding aligns with studies by Ekawati et al. [35], which demonstrate that this age group often seeks preventive healthcare services due to increasing awareness of their health risks as they age. Furthermore, the significant percentage of women with only middle or high school education (57.5%) and the high unemployment rate (42.5%) reflect a critical socioeconomic context influencing healthcare-seeking behavior. Limited education often correlates with reduced health literacy, impeding the ability to recognize the importance of screening and navigate healthcare systems.

Economic factors also present notable barriers. With 81% of respondents earning less than 3 million IDR per month, the financial constraints may limit their ability to prioritize preventive care over immediate family needs. According to McMaughan et al. [36], lower socioeconomic status is consistently associated with reduced access to healthcare services, including cervical cancer screening. This highlights the urgent need for subsidized or free Pap smear programs targeting low-income populations in similar settings.

Despite 53% of participants being informed about Pap smear screening, only 11.5% had undergone the procedure. This stark gap between awareness and action underscores the complexity of barriers beyond information deficits. Study has identified fear, embarrassment, and cultural misconceptions as major contributors to low screening uptake in Indonesia [37]. Similarly, the reliance on healthcare workers as the primary source of information (49.5%) demonstrates their pivotal role in education. However, the limited influence of mass media (32.5%) and social networks (15.5%) suggests missed opportunities for broader dissemination of information.

Further, studies like others reveal that even when women are aware of cervical cancer screening, logistical challenges, such as distance to facilities and long wait times, often deter participation [38]. These challenges are compounded by competing responsibilities, particularly among women who are primary caregivers or financially constrained.

Psychosocial factors, including self-efficacy, attitudes toward screening, and spousal support, emerged as significant predictors of Pap smear behavior. Women with high self-efficacy were over twice as likely to undergo screening (OR = 2.143), consistent with Bandura's Self-Efficacy Theory, which posits that confidence in one's ability to perform a behavior is a critical determinant of action. The findings are corroborated with other study who found that women with high self-efficacy and supportive environments are more likely to participate in preventive healthcare [39].

Spousal support, which doubled the likelihood of screening (OR = 2.084), underscores the family's influence on health decisions. A study has also emphasized the role of husbands in promoting health-seeking behaviors in patriarchal societies, where decisions regarding women's health often involve family approval. Interventions targeting family education could therefore be instrumental in improving screening rates [40].

Consistent with our findings, recent studies from Indonesia highlight the pivotal influence of spousal support and women's self-efficacy on cervical cancer screening uptake. In a cross-sectional study of rural Indonesian women, husband's support was the strongest predictor of undergoing VIA/Pap smear screening ($\beta \approx 0.312$, $P<0.001$) and was linked to higher screening through improved self-efficacy [41]. Similarly, a survey of 600 women in Java found that those with supportive husbands had over four times higher odds of being willing to get screened compared to those without spousal support (OR 4.19, 95% CI 2.81–6.27) [42]. These findings underscore that a husband's encouragement significantly motivates women's participation in screening. Self-efficacy also emerged as a key determinant: women who feel confident in their ability to undergo the procedure are far more likely to actually get screened [43]. In fact, self-efficacy is regarded as "very important" for facilitating cervical cancer screening and reducing the disease burden in Indonesia [43]. Strengthening women's confidence and knowledge may thus amplify the impact of spousal support on screening behavior [41]. At the same time, deep-seated cultural and personal barriers continue to hinder cervical screening in Indonesia. Qualitative evidence indicates that many women harbor feelings of shame or fear about pelvic exams, and prevailing social norms can discourage them from seeking Pap smears. For example, one community-based study reported that 73% of women cited socio-cultural reasons such as a tradition of female family members never being screened and 46% cited religious concerns (e.g. norms of female modesty and "aurat" restrictions) as reasons for avoiding Pap tests. By comparison, lack of husband or family permission was a less frequent but still notable barrier (reported by 32% of women) in that setting. This suggests that even when husbands are supportive, cultural beliefs and misconceptions (e.g. that screening is unnecessary if one is asymptomatic, or the stigma around gynecologic exams) may stand in the way. Our findings echo these patterns, reinforcing the need for culturally sensitive interventions. Health providers in Indonesia have been urged to engage husbands and family members in educational outreach to help dispel myths and overcome these barriers [44]. Such family-centered, culturally tailored strategies could bolster women's self-efficacy and acceptance of cervical screening, ultimately improving screening rates and early cancer detection in the community [42].

Although the logistic regression analysis revealed relatively high odds ratios particularly for self-efficacy (OR = 2.14), positive attitudes (OR = 2.64), and spousal support (OR = 2.08) these values should be interpreted with thoughtful consideration. While such figures indicate strong associations with Pap smear screening behavior, they may also reflect the influence of unmeasured confounding variables not included in the model. Factors such as previous interactions with healthcare providers, community-based education, trust in the healthcare system, or the availability of female health workers may play a significant role in shaping women's decisions to undergo screening. Therefore, while these predictors are statistically significant, future research should employ

more comprehensive models to account for a broader range of contextual and behavioral determinants in order to accurately estimate their true effect.

Furthermore, the inclusion of an interaction term between self-efficacy and husband's support in the logistic regression model revealed a statistically significant synergistic effect on Pap smear screening behavior. Women who possessed both high self-efficacy and strong spousal support were more than twice as likely to undergo screening compared to those with only one or neither factor (OR = 2.41; 95% CI = 1.13–5.14; p = 0.024). This interaction highlights the compounded influence of individual confidence and external support on health behavior, emphasizing that interventions targeting psychosocial empowerment may be more effective when complemented by efforts to engage family members, particularly spouses. These findings are in line with social ecological frameworks that stress the importance of multi-level influences in shaping health behaviors, and they support the development of integrated strategies that address both intrapersonal and interpersonal determinants of preventive care.

Attitudes toward screening also play a vital role. While 52.5% of participants had positive attitudes, a substantial 47.5% held negative perceptions, reflecting fears, misconceptions, or lack of trust in the healthcare system. These findings echo those of Baxter et al. [45], which highlighted the importance of addressing psychological and cultural barriers to foster positive attitudes toward screening.

While 76% of participants reported positive cultural influences on screening, this factor did not show significant associations with behavior (p = 0.445). This suggests that systemic barriers, such as accessibility and convenience, may overshadow cultural attitudes. Widayanti et al. [46] found that while supportive cultural norms encourage health-seeking behaviors, logistical challenges, such as transportation costs and clinic availability, remain primary deterrents.

Situational influences, such as the perception of healthcare access, were evenly divided (51% positive vs. 49% negative). This highlights an area for intervention, as situational barriers can be addressed through policy changes. Joshi et al. [47] proposed mobile screening units and flexible clinic hours as effective strategies to overcome such challenges, particularly in rural or resource-limited settings like Aceh.

The low prevalence of family history (9.5%) may contribute to reduced perceived susceptibility, a critical component of the Health Belief Model. Oringtho et al. [48] demonstrated that individuals with a family history of cervical cancer are more likely to perceive themselves at risk, thereby increasing their engagement in preventive measures. However, for women without such histories, risk perception can be enhanced through targeted education emphasizing general risk factors, including HPV infection and sexual behavior [49].

In conclusion, this study highlights the multifaceted barriers to cervical cancer screening through Pap smear examinations among women attending the Gynecology Clinic at Dr. Zainoel Abidin General Hospital, Banda Aceh. The findings reveal that while awareness of cervical cancer and screening exists among participants, significant gaps remain between knowledge and actual participation. Socioeconomic challenges, low self-efficacy, negative perceptions, and insufficient spousal support emerged as critical barriers, compounded by systemic issues such as healthcare accessibility and service availability.

Psychosocial determinants, particularly self-efficacy and spousal support, were strongly associated with screening behavior, emphasizing the importance of empowering women and fostering family involvement. Although cultural influences were generally supportive, they were insufficient to overcome logistical and systemic barriers, suggesting the need for infrastructural improvements and targeted policy interventions.

The study also underscores the importance of integrated, community-based strategies to address the identified barriers. Tailored educational campaigns, family-centered interventions, and enhanced access to screening services, including mobile units and subsidized programs, are recommended to improve screening uptake. These findings provide valuable insights for healthcare providers and policymakers aiming to reduce the burden of cervical cancer in Aceh and other resource-limited settings. Future research should explore longitudinal impacts of interventions to sustain and enhance participation in cervical cancer prevention programs.

Author Contribution Statement

Hibban Ar Royan and Febrina Yolanda Conceptualization, methodology, data collection, formal analysis, and writing original draft preparation. Munizar: Supervision, review, and editing of the manuscript. All authors have read and approved the final version of the manuscript.

Acknowledgements

General

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Approval

This study was approved by the Ethics Committee of Dr. Zainoel Abidin General Hospital, Banda Aceh.

Ethical Declaration

This research has been approved by ethical committee of General Hospital Dr. Zainoel Abidin with the number of ethical approval 178/ETIK-RSUDZA/2024.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Study Registration

This study is not registered to any dataset

Conflict of Interest

The authors declare no conflict of interest related to this study.

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