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Factors Associated with Women's Awareness of Early Detection of Cervical Cancer

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Abstract

Background: About 70% of women with cervical cancer present to health services at an advanced stage, making it difficult to treat and leading to high rates of female cancer mortality. Women's awareness of early detection of cervical cancer remains a problem.

Objective: To determine the factors associated with women's awareness of early detection of cervical cancer.

Methods: This type of research is a quantitative study with a cross-sectional design. The population in the study were all mothers in Padang City. The sample in this study amounted to 320 with simple random sampling technique. The analysis method used was univariate analysis to see the frequency distribution, bivariate analysis was performed to evaluate the relationship using the chi-square test with a confidence level of 95% ($\alpha = 0.05$), and multivariate logistic regression analysis to identify independent variables that had the most significant effect on the dependent variable. Data were analysed using a computer.

Results: The study showed that cadre support, health worker support and motivation were factors associated with women's awareness of early detection of cervical cancer. Health worker support was the factor most associated with early detection of cervical cancer.

Conclusion: Health worker support is the most important factor in sensitizing women to do cervical cancer early detection.

Keywords: Cervical Cancer, Early Detection Behaviour, Women's Awareness

INTRODUCTION

The "Global Strategy to Accelerate the Elimination of Cervical Cancer" campaign was relaunched on November 17, 2020, at the World Health Assembly, announcing that 194 countries worldwide will achieve the "90-70-90" target by 2030 [1]. More than 90% of cases and deaths from cervical cancer occur in middle-income countries, including Indonesia [2]. Unfortunately, many women diagnosed with cervical cancer have a poorer prognosis due to detection at an advanced stage and late presentation to health services [3]. Although Indonesia has made some progress since the 2018 report on breast and cervical cancer in Indonesia [3], there are still many things to worry about; Indonesia is ranked 2nd among other Asian countries in terms of cervical cancer mortality and incidence with an Age Standardized Incense (ASIR) of 23.4 per 100,000 women, and an Age Standardized Mortality Rate (ASMR) of 13.9 per 100,000 women. While the World Health Organization (WHO) suggests reducing the ACIR of cervical cancer to less than 4 per 100,000 women through vaccination, screening, precancerous treatment [4].

The prevalence of cervical cancer in Indonesia is 0.8 per 1000 population. The prevalence of cervical cancer in West Sumatra is 0.9 per 1000 population, higher than the national average. There were 2,285

cases of cervical cancer in West Sumatra and ranked 9th out of all provinces in Indonesia. The number of cervical cancer cases in West Sumatra continues to increase every year, with 37 cases in 2009 and more than 300 cases in 2017 [3].

Cervical cancer is a cancer that can be detected early, and if diagnosed at an early stage it can be treated effectively. However, if the cancer has reached an advanced stage, treatment becomes more difficult as the cancer cells have spread to other organs in the body. Early detection of cervical cancer can be done through various methods, including Pap Smear and Visual Inspection with Acetic Acid (VIA). Every sexually active woman is recommended to undergo Pap Smear or VIA at least once every six months to detect any precancerous lesions or cancer cells. Unfortunately, not all women realize the importance of regular screening for early detection, leading to an increase in cervical cancer cases over the years [5]. The impact of cervical cancer on women is multifaceted and wide-ranging, affecting their sexual and physical health, as well as their overall well-being [6].

Data from the Ministry of Health in 2018 shows that the coverage of early detection of cervical cancer in Indonesia through pap smear and VIA is still very low at around 5%. While in West Sumatra, only 2.2% of women of childbearing age have undergone IVA. Based on data obtained by the Padang City Health Office in 2017, out of 128,909 women of productive age (30 - 50 years) only 8.3% had their cervix and breasts examined. About 1.6% of women of productive age who underwent this examination showed positive IVA results. According to the World Health Organization in 2013, the low coverage of early detection of cervical cancer is caused by women's lack of awareness of the importance of early detection and causes regret in women when they come to health services with a diagnosis of advanced cervical cancer stage cervical cancer stage [7].

Seeing the above phenomenon and the results of preliminary studies conducted by researchers, it is very important to conduct research on cervical cancer and women's awareness of early detection of cervical cancer in Padang City.

OBJECTIVE

This study aims to determine the factors associated with women's awareness of early detection of cervical cancer.

METHODS

This study used a cross-sectional design. This study focuses on a specific sample that meets the predetermined inclusion and exclusion criteria. The sampling process was conducted at health centers in Padang City. This study involved 320 samples. The data collection process used a validated and reliable questionnaire as the measurement instrument. Validity assessment was conducted using Pearson correlation. Reliability assessment was conducted with Cronbach's alpha, where a value equal to or greater than 0.6 indicates satisfactory dependability.

The study was conducted over three months, starting from November 2023 to February 2024. The statistical analysis used in this study consisted of univariate analysis featuring frequency distributions, bivariate analysis which included the use of the chi-square test, and multivariate analysis which involved the application of logistic regression. The application of hypothesis testing was used in the context of bivariate analysis to assess the relationship between the independent and dependent variables. In the context of statistical analysis, a test known as the chi-square test is used for the purpose of conducting

bivariate analysis, while logistic regression is applied for the purpose of conducting multivariate analysis. This study used a 95% confidence level (α = 0.05).

RESULTS

Table 1. Frequency Distribution of Respondents' Characteristics in Conducting Early Detection of Cervical Cancer Early Detection of Cervical Cancer [n=320]

Characteristic	f	%
Mother's Age		
Late Teens	34	10.6
Early Adulthood	129	40.3
Late Adulthood	116	36.2
Early Elderly	41	12.8
Total	320	100
Education Level		
Elementary School	19	5.9
Junior High School	54	16.9
Senior High School	160	50.0
College	87	27.2
Total	320	100
Mother's Work		
BLUD	7	2.2
Housewives	159	49.7
Private	79	24.7
Wiraswasta	28	8.8
Civil servants	47	14.7
Total	320	100
Economic Status		
Not able	100	31.2
Able	220	68.8
Total	320	100
Tribe		
Minang	286	89.4
Not Minang	34	10.6
Total	320	100

Based on table 1, most of the respondents, 40.3%, had early adulthood and 10.6% were in their late teens. Most of the respondents, 50%, had a high school education and a small portion, 5.9%, had an elementary school education. The economic status of the respondents, most of whom were categorized as well-off, namely 68.8% and had a Minang ethnic background of 89.4%.

Table 2. Frequency Distribution of Respondents' Knowledge and Attitudes in Taking Early Detection Measures for Cervical Cancer [n=320]

Variable	f	[%]
Knowledge		
Bad	60	18.8
Good	260	81.2
Total	320	100
Sikap		
Buruk	140	43.8
Baik	180	56.2
Total	320	100

Based on table 2, most respondents have good knowledge, 81.2% and have a good attitude (56.2%).

Table 3. Frequency Distribution of Respondents with Family History of Cancer in Performing Cervical Cancer Early Detection Measures [n=320]

Family History of Cancer	f	[%]
No history of cancer	243	75.9
Have a history of Cancer	77	24.1
Sum	320	100

Table 3 illustrates that most respondents had no family history of cancer (75.9%).

Table 4. Frequency Distribution of Respondents' Social Support in Taking Early Detection Measures for Cervical Cancer in Padang City (n=320)

Support Variables	f	%
Husband Support		
Bad	233	72.8
Good	87	27.2
Total	320	100
Family Support		
Poor	113	35.3
Good	207	64.7
Total	320	100
Health Worker Support		
Poor	133	41.6
Good	187	58.4
Total	320	100
Cadre Support		
Poor	177	55.3
Good	143	44.7
Total	320	100

Table 4 describes social support from husband, family, health workers and cadres. Most respondents had poor husband support [72.8%], good family support [64.7%], good health worker support [58.4%] and poor cadre support [55.3%].

Table 5. Frequency Distribution of Respondents' Needs in Taking Early Detection Measures for Cervical Cancer in Padang City [n=320]

Respondents' Needs	f	%
No Need	100	31.2
Need	220	68.8
Total	320	100.0

Table 5 illustrates that most respondents, 68.8%, felt the need to do early detection of cervical cancer.

Table 6. Frequency Distribution of Respondents' Motivation in Taking Early Detection Measures for Cervical Cancer in Padang City [n=320]

Respondent Motivation	f	%
Poor Motivation	80	25
Good Motivation	240	75
Total	320	100

Table 6 shows that most respondents, namely [75%], have good motivation in conducting early detection of cervical cancer.

Table 7. Frequency Distribution of Respondents in Taking Early Detection Measures for Cervical Cancer [n=320]

Respondents' Early Detection Measures for Cervical Cancer	f	%
Never	243	75.9
Ever	77	24.1
Total	320	100

Table 7 above shows that most mothers, 75.9%, have never done early detection of cervical cancer.

Bivariate Analysis

Table 9. Relationship between Mother's Age and Early Detection of Cervical Cancer

Variables	Early detection of cervical cancer				Total		*p-value*
	Never		Ever				
Age	f	%	f	%	F	%	
Late Teens	9	26.5	25	73.5	34	100	
Early Adulthood	31	24	98	76	129	100	
Late Adulthood	24	20.7	92	79.3	116	100	0.544
Early Elderly	13	31.7	28	68.3	41	100	
Total	77	24.1	243	75.9	320	100	

Table 9 illustrates that 26.5% of respondents in late adolescence have taken early detection of cervical cancer while 31.7% of early adolescents have taken early detection of cervical cancer. Statistical test results showed no association between age and early detection of cervical cancer (p-value > 0.05).

Table 10: Relationship between mother's last education and cervical cancer early detection measures

Variable / Last Education	Early Detection Measures for Cervical Cancer				Total		*p-value*
	Never		Ever				
	f	%	F	%	F	%	
Elementary School	5	26.3	14	73.7	19	100	0.974
Junior High School	14	25.9	40	74.1	54	100	
Senior High School	38	23.8	122	76.2	160	100	
Higher Education	20	23	67	77	87	100	
Total	77	24.1	243	75.9	320	100	

Table 10 illustrates that 23% of respondents with tertiary education have taken early detection of cervical cancer. The results of statistical tests showed no relationship between the last education of respondents and early detection of cervical cancer (p-value> 0.05).

Table 11: Relationship between mother's occupation and early detection of cervical cancer

Variable	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Employment	f	%	f	%	f	%	
BLUD	1	14.3	6	85.7	7	100	0.091
Housewife	29	18.2	130	81.8	159	100	
Private	22	27.8	57	72.2	79	100	
Self-employed	8	28.6	20	71.4	28	100	
CIVIL SERVANT/NI/POLRI	17	36.2	30	63.8	47	100	
Total	77	24.1	243	75.9	320	100	

Table 11 shows that 36.2% of respondents with civil servant/NI/POLRI occupation had done early detection of cervical cancer. The statistical test results show that there is no relationship between the occupation of respondents and the act of early detection of cervical cancer (p-value> 0.05).

Table 12: Relationship between economic factors and early detection of cervical cancer

Variable	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Economic Factors	f	%	f	%	f	%	
Not Able	23	23.0	77	77.0	100	100	0.874
Able	54	24.5	166	75.5	220	100	
Total	77	24.1	243	75.9	320	100	

About 23% of respondents with poor economy have done early detection of cervical cancer. Statistical test results showed no relationship between economic factors and early detection of cervical cancer (p-value> 0.05).

Table 13: Relationship between Respondents' Tribe and Cervical Cancer Early Detection Behavior

Variable	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Tribe	f	%	f	%	f	%	
Minang	68	23.8	218	76.2	286	100	
Not Minang	9	26.5	25	73.5	34	100	0.728
Total	77	24.1	243	75.9	320	100	

Table 13 shows that 23.8% of respondents from the Minang tribe have done early detection of cervical cancer. The statistical test results show that there is no relationship between the ethnicity of respondents and the act of early detection of cervical cancer, where the p-value> 0.728.

Table 14: Relationship between Respondents' Knowledge and Early Cervical Cancer Detection Measures

Variable	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Knowledge	f	%	f	%	f	%	
Poor Knowledge	13	21.7	47	78.3	60	100	
Good Knowledge	64	24.6	196	75.4	260	100	0.630
Total	77	24.1	243	75.9	320	100	

About 21.7% of respondents with poor knowledge have done early detection of cervical cancer. Statistical test results show that there is no relationship between respondents' knowledge and early detection of cervical cancer (p-value> 0.05).

Table 15: Relationship between Respondents' Attitudes and Early Cervical Cancer Detection Measures

Variables	Lack of early detection of cervical cancer				Total		*p-value*
	Ever		Never				
	f	%	f	%	f	%	
Attitude	27	19.3	113	80.7	140	100	
Poor	50	27.8	130	72.2	180	100	0.103
Good	77	24.1	243	75.9	320	100	

About 19.3% of respondents with poor attitudes had taken early detection of cervical cancer. The results of statistical tests showed that there was no relationship between respondents' attitudes and early detection of cervical cancer (p-value> 0.05).

Table 16: Relationship between Respondents' Husband Support and Early Cervical Cancer Detection Measures

Variables	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
	f	%	f	%	f	%	
Husband Support	54	23.2	179	76.8	233	100	
Poor	23	26.4	64	73.6	87	100	0.544
Good	77	24.1	243	75.9	320	100	

About 23.2% of respondents who have good husband support have taken early detection of cervical cancer. Statistical test results showed that there was no relationship between husband's support and early detection of cervical cancer (p-value> 0.05).

Table 17: Relationship between Respondents' Family Support and Early Cervical Cancer Detection Measures

Variables	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
	f	%	f	%	f	%	
Family Support	26	23	87	77	113	100	
Poor	51	24.6	156	75.4	207	100	0.850
Good	77	24.1	243	75.9	320	100	

Table 17 shows that 23% of respondents who had poor family support had taken cervical cancer early detection measures. Statistical test results showed that there was no association between family support and cervical cancer detection (*p-value* > 0.05).

Table 18: Relationship between Health Worker Support and Cervical Cancer Early Detection Measures

Variables	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Health Worker Support	f	%	f	%	f	%	
Poor	23	17.3	110	82.7	133	100	
Good	54	28.9	133	71.1	187	100	0.024
Total	77	24.1	243	75.9	320	100	

About 17.3% of respondents received unfavourable support from health workers. The statistical test results showed that there was a relationship between the support of health workers and the act of early detection of cervical cancer (p-value <0.05).

Table 19: Relationship between Health Cadre Support and Cervical Cancer Early Detection Measures

Variables	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Cadre Support	f	%	f	%	f	%	
Poor	34	19.2	143	80.8	177	100	0.030
Good	43	30.1	100	69.9	143	100	
Total	77	24.1	243	75.9	320	100	

About 29.2% of respondents with poor health support had taken early detection of cervical cancer. The results of statistical tests show that there is a relationship between the support of health cadres and the act of early detection of cervical cancer.

Table 20: Relationship between Respondents' Family Cancer Health History and Cervical Cancer Early Detection Measures

	Early detection of cervical cancer				Total		*p-value*
Variables	Ever		Never				
	f	%	F	%	f	%	
Family History of cancer	61	25.1	182	74.9	243	100	0.439
None	16	20.8	61	79.2	159	100	
Yes	77	24.1	243	75.9	320	100	

About 25.1% of respondents who did not have a family history of cancer had early detection of cervical cancer. Statistical test results showed no association between family history of cancer and early detection of cervical cancer (p-value > 0.05).

Table 21: Relationship between Information Exposure and Cervical Cancer Early Detection Measures

Variables	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
Information Exposure	f	%	f	%	f	%	
Exposed to	60	26.7	165	73.3	225	100	0.094
Not exposed	17	17.9	78	82.1	95	100	
Total	77	24.1	243	75.9	320	100	

About 26.7% of respondents who were exposed to information about early detection of cervical cancer had done early detection of cervical cancer. Statistical test results showed no association between information exposure and early detection of cervical cancer (p-value > 0.05).

Table 22: Relationship between Respondents' Perceived Needs and Cervical Cancer Early Detection Actions

Variables	Early detection of cervical cancer				Total		*p-value*
	Ever		Never				
	f	%	f	%	f	%	
Respondent Needs	19	19.0	81	81.0	100	100	0.198
No Need	58	26.4	162	73.6	220	100	
Need	77	24.1	243	75.9	320	100	

About 19% of respondents who felt no need about cervical cancer early detection had done cervical cancer early detection. The results of statistical tests showed that there was no relationship between respondents' need for early detection of cervical cancer and early detection of cervical cancer (p-value> 0.05).

Table 23: Relationship between Respondents' Motivation and Early Detection of Cervical Cancer

Variables	Cervical cancer early detection behaviour				Total		*p-value*
	Ever		Never				
	f	%	f	%	f	%	
Motivation	12	15.0	68	85.0	80	100	0.041
Bad	65	27.1	175	72.9	240	100	
Total	77	24.1	243	75.9	320	100	

About 15% of respondents who have poor motivation have done early detection of cervical cancer. The statistical test results show that there is a relationship between motivation and early detection of cervical cancer (*p-value* <0.05).

Multivariate Analysis

Table 24. Multivariate Analysis of Dominant Determinants in Early Detection of Cervical Cancer

	Coefficient	*P*	OR (IK 95.0%)
Variables			
Age	-0.038	0.822	0.963 (0.690 - 1.342)
Education level	-0.495	0.012	0.610 (0.414 - 0.897)
Occupation	0.475	0.001	1.609 (1.227 - 2.109)
Cancer history	-0.301	0.427	0.740 (0.352 - 1.556)
Tribe	0.211	0.637	1.235 (0.514 - 2.967)
Knowledge factor	-0.228	0.620	0.796 (0.324 - 1.959)
Information exposure factor	-0.351	0.363	0.704 (0.331 - 1.498)
Husband support factor	0.128	0.681	1.137 (0.618 - 2.091)
Family support factor	-0.351	0.305	0.704 (0.360 - 1.376)

Health worker support factor	0.740	0.020	2.096 (1.122 - 3.916)
Cadre support factor	0.396	0.212	1.486 (0.798 - 2.768)
Mother's attitude	0.403	0.225	1.497 (0.781 - 2.869)
Mother's needs factor	0.046	0.900	1.047 (0.513 - 2.138)
Economic factors	-0.122	0.713	0.885 (0.462 - 1.696)
Mother's motivation factor	0.688	0.090	1.989 (0.897 - 4.410)
Constant	-3.405	0.041	0.033

Based on the table above shows the results that the most dominant factor among other factors is the support of health workers with an OR value of (2.096). The results of the analysis test explain that the support of health workers has a coefficient value of (0.74) which means that the relationship between the health worker support factor and early detection of cervical cancer is positive. This means that the support of health workers is the most dominant factor of early detection of cervical cancer which is characterized by 2,096 times to respondents.

DISCUSSION

Cervical cancer is one of the cancers that occurs in women and can be prevented by early detection. Early detection of cervical cancer can be done with pap's smear and IVA. Unfortunately, not all women who have had sexual intercourse are aware of the importance of early detection of cervical cancer [8]. The results of research conducted by researchers in Padang City showed that a small proportion of respondents (24.1%) had conducted early detection of cervical cancer out of 320 respondents, while more than half, namely 75.9% of respondents had never conducted early detection of cervical cancer either Pap's smear or IVA. Lack of awareness of the symptoms of cervical cancer and the importance of routine examinations can cause patients to not realize that they have the disease until the disease has reached an advanced stage. This is very concerning because cervical cancer is highly treatable when detected early, but survival rates decrease significantly when diagnosed at an advanced stage [9]. Medical records at one of the last referral hospitals in West Sumatra showed that patients treated with cervical cancer were the highest number of patients treated in the oncology room with 43 patients registered. Generally, patients admitted to this hospital came with advanced stages.

Respondents did not realize that early detection is very important to avoid pain and death. Fear and unpreparedness to accept reality and feeling unnecessary were the most common reasons given by respondents who did not want to do early detection of cervical cancer. Respondents did not realize the impact that would be caused if they did have cervical cancer, especially if it was in an advanced stage. Many factors cause respondents to not realize the importance of this early detection. The results showed that cadre support, health worker support and respondent motivation were factors associated with awareness of early detection of cervical cancer. This is in accordance with the results of research conducted by Basu in the Maldives where motivation is one of the factors associated with early detection of cervical cancer [10]. In contrast, family history of cancer, respondents' needs and exposure to mass media are not factors associated with early detection of cervical cancer. The results of this study are in line with research by Putri et al, (2021) that family history of cancer, respondents' needs, and exposure to mass media were not found to be factors associated with early detection of cervical cancer [11].

Social support, especially health worker support, is the most dominant factor associated with early detection of cervical cancer in this study. These results are supported by research conducted by

Mwalwanda et al, (2024) which says that health workers are the main factor for patients to do early detection of cervical cancer [12]. Health workers, especially nurses, have an important role in supporting women's awareness and participation in cervical cancer early detection. By facilitating women, explaining the benefits, modelling and engaging in early detection, health workers can help encourage early detection and reduce cervical cancer mortality [13]. This becomes important when researchers also get data from the results of FGDs conducted on several respondents who have never done early detection of cervical cancer. The themes found during the FGDs were fear, unpreparedness with unexpected results, needing health workers as examples, and continuous information about cervical cancer. This illustrates that the support of health workers is important in making women aware of early detection of cervical cancer [14]. Health workers are a health profession that aims to improve the health status of the community. In this study, almost all respondents said that health workers are the most trusted people in providing information including information about cervical cancer and early detection of cervical cancer. The results of interviews from several respondents who had conducted early detection of cervical cancer obtained data that the respondents' stiffness was reduced by the information provided by health workers, and the assistance of health workers when receiving the results of the examination. When the results of the examination did not match the respondent's expectations, the health worker tried to keep the respondent strong and provide solutions / further actions that must be taken by the respondent. Health worker assistance in this situation affects the respondent's next treatment action [15].

CONCLUSIONS

The results showed that cadre support, health worker support and motivation are factors associated with women's awareness of early detection of cervical cancer. Health worker support is the factor most associated with early detection of cervical cancer**.**

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest in connection with the research, authorship and or publication of this article.

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