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Early Marriage And Cervical Cancer Risk In Women Of Reproductive Age In Kediri

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Abstract: Early marriage is still prevalent in Indonesia and poses health risks such as cervical cancer. Marriage at the age of <20 years makes the reproductive organs more vulnerable to HPV infection. At Bhayangkara Hospital Kediri, many cases of cervical cancer occur in women of reproductive age. **Objective:** To analyze the relationship between a history of early marriage and the incidence of cervical cancer among women of reproductive age at Bhayangkara Hospital Kediri. **Methods:** This study is a quantitative research with an observational analytic design using a case-control approach. The case population consisted of all cervical cancer patients treated at Bhayangkara Hospital Kediri during March–May 2025. The control population consisted of women of reproductive age in Bandar Lor, Kediri City, who were not diagnosed with cervical cancer. The research sample consisted of 22 respondents, including 11 respondents in the case group and 11 respondents in the control group, selected using total sampling for the case group and purposive sampling for the control group. Data were collected through interviews, medical records, and subjective data, and analyzed using the chi-square test. **Results:** The chi-square test showed a p-value of 0.000 < 0.05. The odds ratio was 0.154 with a 95% confidence interval. Since this value is <1, it indicates that the group without early marriage had a lower risk of developing cervical cancer compared to the group with early marriage. Women who married at an early age had a 0.154 times higher risk of being diagnosed with cervical cancer. **Conclusion and Suggestions:** There is a significant relationship between a history of early marriage and the incidence of cervical cancer in women of reproductive age. Education, active roles of healthcare workers, and expanded early detection are required.
Keywords: *Early Marriage, Cervical Cancer, Reproductive Age*

Introduction

The unchecked proliferation of aberrant cells in the cervix is the hallmark of cervical cancer. Cervical cancer is mostly caused by a persistent infection with the human papillomavirus (HPV), which is mainly spread through sexual activity. Early marriage often results in earlier sexual activity among women, thereby increasing the risk of HPV exposure. Early initiation of sexual intercourse significantly raises the likelihood of infection with high-risk HPV types, particularly 16 and 18 [1]. With an expected 660,000 cases diagnosed in 2022, cervical cancer ranks as the fourth most frequent malignancy among women worldwide. Cervical cancer accounted for about 94% of the estimated 350,000 associated maternal fatalities; low- and middle-income nations, especially those in Africa below the Sahara, Central and South America, and Southeast Asia, had the highest

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incidence and mortality [2]. In the Southeast Asia region, Indonesia ranks third in new cases and fourth in mortality rates. Indonesia reported 242,988 fatalities and 408,661 new cases of cancer in 2022, according to the International Agency for Research on Cancer (IARC) [3]

In East Java, the Provincial Health Office reported 13,078 cases of cervical cancer and 12,186 cases of breast tumors in 2019. In 2022, 6,293,244 women of reproductive age underwent Visual Inspection with Acetic Acid (VIA) screening, with 4,133 (0.9%) testing positive. Low awareness among women aged 30–50 years regarding the importance of early detection, fear or embarrassment during examinations, and limited support from stakeholders were identified as key barriers to cervical cancer screening participation [4]. Based on a research journal entitled *"Analysis of Factors Associated with the Incidence of Cervical Cancer at Kediri District General Hospital in 2018"*, the incidence of cervical cancer at Kediri District General Hospital was reported at 47.8%. Contributing factors included a history of early marriage (47.2%), parity >3 (65.2%), and hormonal pill use for more than 5 years (54.3%) [5].

According to data from Bhayangkara Hospital Kediri, between January and December 2024, there were 106 cervical cancer patients, consisting of 87 outpatients and 19 inpatients. The high number of cervical cancer cases cannot be separated from various risk factors, one of which is the practice of early marriage, which remains common in Indonesia, including in Kediri City. Early marriage refers to marriage undertaken by individuals who are not yet emotionally and mentally prepared. A healthy marriage ideally requires women to be at least 20 years old and men at least 25 years old. Thus, early marriage can be defined as marriage in which the woman is under 20 years old and the man under 25 years old. Marriages that occur before the age of 20 are still common in Indonesia, particularly in areas with lower socioeconomic conditions. The prevalence of early marriage in several regions of Indonesia, including Kediri City, remains relatively high. This phenomenon places women of reproductive age at greater risk of developing various reproductive health problems, one of which is cervical cancer [6].

Each year, 14.2 million girls marry before reaching maturity [7]. According to UNICEF (2020), although a decline in child marriage rates has been observed, Indonesia

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remains the second-highest country in Southeast Asia for early marriage after Cambodia. Data from the 2022 Indonesia Demographic and Health Survey (IDHS) reported that 13% of women were married before the age of 20, with the median age of marriage at 20.1 years, and the median age of first marriage in rural areas at 19.7 years.

In Kediri City, the incidence of early marriage remains relatively high. Therefore, it is important to examine the relationship between a history of early marriage and cervical cancer in this region to better understand its impact and to develop appropriate health interventions. Preventive efforts such as reproductive health education, HPV vaccination, and early cervical cancer screening programs are essential to reduce the risk among women of reproductive age in this area.

Method

This study examines the association between the incidence of cervical cancer in women of reproductive age and a history of early marriage using a quantitative analytical observational design and a case-controlled methodology. In this study, the case population consisted of all cervical cancer patients treated at Bhayangkara Hospital Kediri from March to May 2025. The control population consisted of women of reproductive age in the Bandar Lor area, Kediri City, who were not diagnosed with cervical cancer. The research sample comprised 22 respondents, selected using total sampling for the case group and purposive sampling for the control group. For the case group: cervical cancer patients treated at Bhayangkara Hospital Kediri, aged 20–45 years, and willing to participate as respondents. For the control group: women aged 20–45 years, not diagnosed with cervical cancer, and willing to participate as responents. For both case and control groups: women with other sexually transmitted diseases and those outside the age range of 20–45 years. The independent variable in this study was a history of early marriage (marriage at <20 years for women), while the dependent variable was the incidence of cervical cancer (based on medical records). Information was gathered from respondents' subjective reports, medical records, and interviews. The Chi-Square test with a significance level of $p<0.05$ was used after data analysis, which included editing, coding, scoring, and tabulation. The results showed a significant correlation between a history of early marriage and the development of cervical cancer among women of reproductive

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age. On the other hand, no significant link was discovered if p>0.05. This research has been approved by the Research Ethics Committee of Institut Ilmu Kesehatan Bhakti Wiyata Kediri, with approval number 11/FKes/TK/IX/2025 on 9 December 2025.

Result

A. Frequency Distribution Based on Education, Occupation, Cervical Cancer Diagnosis, Parity, and Early Marriage

Table 1. Frequency Distribution Based on Education, Occupation, Cervical Cancer Diagnosis, Parity and Early Marriage History

Variables	Frequency	%
Education		
Elementary School	5	22.7
Junior Hugh School	6	27.3
Senior High School	7	31.8
University	4	18.2
Occupation		
Employed	8	36,4
Unemployed	14	63,6
Cervical Cancer Diagnosis		
Diagnosed	11	50
Not Diagnosed	11	50
Parity		
Primipara	3	13,6
Multipara	12	54,5
Nulipara	7	31,8
Early Marriage History		
No	13	59,1
Yes	9	40,9

Based on the analysis presented in Table 1, the majority of respondents had a senior high school education background, comprising 7 respondents (31.8%). A total of 14 respondents (63.6%) were unemployed. Of all participants, 11 respondents (50%) were diagnosed with cervical cancer, while the remaining 11 respondents (50%) were not diagnosed with the disease. The largest proportion of respondents were multiparous women, accounting for 12 respondents (54.5%). In addition, 13 respondents (59.1%) reported no history of early marriage.

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B. Bivariate Analysis

Table 2. Chi-Square Test Results of Early Marriage History and Cervical Cancer

Early Marriage History	Cervical Cancer				Total		P value
	Tidak		Ya				
	F	%	F	%	F	%	
No	11	50	2	9.1	13	59.1	0,000
Yes	0	0	9	40.9	9	40.9	
Total	11	50	11	50	22	100	

According to the chi-square analysis presented in the table, the significance value (p-value) obtained was 0.000, which is below the threshold of 0.05. This finding indicates a statistically significant association between a history of early marriage and the incidence of cervical cancer.

Table 3. Odds Ratio Results of Early Marriage History and Cervical Cancer

Value	Lower	Upper	95% Confidence Interval
Cervical Cancer = Yes	.156	.043	.550
N of Valid Cases	22		

As shown in Table 3, the odds ratio was 0.154 with a 95% confidence interval. This suggests that women who did not marry early were less likely to develop cervical cancer, whereas early marriage significantly increased the risk of cervical cancer.

Discussion

A. History of Early Marriage

The findings of this study show that 40.9% of respondents were married before the age of 20, classified as early marriage, while 59.1% married at age 20 or older. Early marriage has been consistently associated with an increased risk of cervical cancer [8]; [9]; [10]. This is mostly because the transformation zone and immature cervical epithelial cells are more vulnerable to HPV infection, which is the primary cause of cervical cancer [11]. Because their cervical membrane is not fully developed

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to withstand HPV exposure, women who start having sex at a younger age are more vulnerable [12].

This finding is consistent with previous studies reporting that the female reproductive organs under the age of twenty are biologically immature, making cervical cells more susceptible to HPV infection and malignant transformation [13]. Women who marry and begin sexual activity at a younger age face a significantly higher risk of cervical cancer. Therefore, preventing early marriage is an important public health strategy to reduce cervical cancer incidence. Education for adolescents and parents regarding the health risks of early marriage is crucial. Similar conclusions were also drawn by [14], who emphasized that early sexual initiation at a biologically immature age increases cervical vulnerability to carcinogenic changes.

B. Cervical Cancer

This study revealed that 50% of respondents were diagnosed with cervical cancer. The disease originates from the cervical epithelium, with HPV types 16 and 18 responsible for nearly 70% of cases and invasive precancerous lesions [15]. Common symptoms include postcoital bleeding, persistent vaginal bleeding, foul-smelling discharge, abdominal pain, and genital discomfort. Beyond HPV infection, cervical cancer is also associated with unhealthy lifestyles, poor reproductive health practices, high parity, low education and income levels, and sociocultural factors [16].

Early sexual activity and high parity are significant risk factors for cervical cancer, alongside smoking and a history of sexually transmitted infections that increase HPV transmission. This study confirms that women with a history of early marriage are at greater risk of cervical cancer, supporting previous findings by [17]; [18].

C. The Relationship Between a History of Early Marriage and the Incidence of Cervical Cancer in Women of Reproductive Age

Cervical cancer incidence among women of reproductive age was shown to be significantly correlated with early marriage ($p = 0.000$). According to the odds ratio (OR = 0.154; 95% CI), women who did not have a history of early marriage were significantly less likely to develop cervical cancer than those who did, or women who

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married young were found to have a 0.154 times higher risk of receiving a cervical cancer diagnosis.

This study demonstrates a significant association between early marriage and cervical cancer, with women who married before the age of 20 showing a higher risk compared to those who married later. These findings are consistent with Mekonnen et al. (2023), who reported a 2.95-fold higher risk of cervical cancer among women initiating sexual activity before age 18. The increased vulnerability at younger ages may be explained by the immaturity of the cervical epithelium, particularly the wider and more exposed transformation zone, which facilitates HPV persistence and progression to precancerous lesions (CIN). Furthermore, international evidence indicates that persistent HPV infection can progress to invasive cervical cancer over several decades, with younger women being more susceptible to precancerous lesions due to their immature cervical tissue [19]; [20].

Early sexual debut and early marriage represent important determinants of cervical cancer risk. Women who engage in sexual activity before the age of 20 are biologically more vulnerable, as the cervix remains immature and more susceptible to persistent HPV infection, which may progress to precancerous lesions and invasive cancer over time. Early marriage further contributes to this risk by prolonging sexual exposure and increasing the likelihood of high parity, while also being linked to socioeconomic disadvantages that limit access to education, reproductive health information, and preventive services such as HPV vaccination and screening.

CONCLUSION AND SUGGESTION

This study demonstrates a significant association between early marriage and an increased risk of cervical cancer among women of reproductive age. Women who married at a young age were more likely to develop cervical cancer compared to those who married later. These findings highlight the importance of delaying marriage, strengthening reproductive health education, promoting HPV vaccination, and expanding cervical cancer screening programs as key strategies to reduce cervical cancer incidence.

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