



The Relationship between Tribes, Duration of Contraceptive Use and Parity with the Incidence of Cervical Cancer at Dok II Jayapura Regional General Hospital in 2021

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Abstract

Background: Cervical cancer is the second most common cancer suffered by women in Indonesia, after breast cancer, from the incidence or case and death rate. Every year, about 14,000 women are diagnosed with cervical cancer and more than 7,000 die from the disease. This means that every hour, one woman dies from cervical cancer or uterine cancer, with a prevalence in five years of about 64.9 percent. Preliminary data of Dok II Jayapura Hospital, from 105 cancer patients analyzed, there were 11 cases (10.4%) of cervical cancer or the top 3. **Objectives:** This study aims to find out the relationship of tribes, long use of contraception and parity with cervical cancer in Dok II Jayapura Hospital in 2021. **Methods:** This type of research is a quantitative method with a Case Control design at the Regional General Hospital Dok II Jayapura. With a sample of 105 cases, 11 cases and 94 controls. **Result:** The results of this study indicate that tribe ($p = 0.5$) OR: 1.6 (0.4-5.6), parity ($p = 0.20$) OR: 0.87 (0.8-0.9), and duration of use of oral contraceptives ($p = 0.19$) OR: 0.28 (0.05-1.4), not significantly associated with the incidence of cervical cancer in women at Dok II Jayapura Regional General Hospital in 2021.

Keywords: Cervical cancer; Tribe; Parity; Oral Contraception.

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1. Introduction

Cervical cancer is a health issue for Indonesian women due to its high incidence and fatality rate. Every year, 500,000 new cases of cervical cancer are diagnosed worldwide, with over 250,000 fatalities. There are around 52 million women at risk of cervical cancer in Indonesia, which has a population of around 220 million people. Cervical cancer is caused mostly by HPV infection (Human Papilloma Virus). The development of cervical cancer is linked to the development of metaplasia. The squamous columnar junction area, also known as the transformation area, is where most changes occur [1].

Cervical cancer, after breast cancer, is the second most frequent cancer among Indonesian women in terms of incidence and fatality. Cervical cancer affects roughly 14,000 women each year, and more than 7,000 individuals die as a result of it. This means that one woman dies of cervical cancer or uterine cancer every hour, with a five-year prevalence of roughly 64.9 percent [2].

According to data from the World Health Organization's (WHO) Global Burden of Cancer (GLOBOCAN 2020), the number of cases and deaths from cervical cancer till 2018 was 18.1 million cases and 9.6 million deaths. By 2030, cancer deaths are estimated to have risen to more than 13.1 million. According to the International Agency for Research on Cancer (IARC), one out of every five men and women in the globe will develop cancer during their lifetime. Cancer will claim the lives of one out of every eight and one out of every eleven women [3].

According to preliminary data collected at the Dock II Hospital in 2021, 11 cases (10.4 percent) of cervical cancer, the third most common type of cancer, were being treated. According to the above statement, cervical cancer is an essential subject to research because of the high occurrence rate, the danger, and the fact that the disease can be prevented. There are various significant risk factors for cervical cancer to be aware of, including reproductive factors, hormonal variables, and genetic factors, in order to determine whether a woman is at high risk or not, and to prevent and detect cervical cancer early. As a result, at the Regional General Hospital Dok II Jayapura, the researcher plans to investigate the factors linked to the occurrence of cervical cancer in women of childbearing age.

2. Methods

This type of research is an analytic study with a Case Control approach which was carried out at the Regional General Hospital Dok II Jayapura. All 255 cancer patients who visited the Dok II Regional General Hospital's Oncology Polyclinic between January and May 2021 were included in this study. Female patients with cervical cancer who visited the Oncology Polyclinic, Hospital, were used as case samples in this study. A total of 11 samples were collected from the General Hospital Dok II Jayapura, while a total of 94 samples were collected from the Oncology Polyclinic of Dok II Hospital Jayapura from female patients who had not yet been diagnosed with cervical cancer. The case group and the control group were compared at a ratio of 1:9. Purposive sampling is a sample technique used in this study for specific aims and considerations made by researchers based on previously known demographic features or characteristics. Cancer patients who are registered at RUD Dok II

Jayapura for the period January to May 2021 and are willing to be respondents meet the criteria for the research sample.

3. Results

3.1. Relationship between Tribe and the Incidence of Cervical Cancer

Table 1: Chi-square and OR analysis between the Respondents' Tribe and the incidence of cervical cancer at the DOK II Jayapura Hospital in 2021

Age	Cases		Controls		Total	%
	n	%	n	%		
Papuan	6	54.5	40	46.2	46	43.8
<u>Non papuan</u>	5	45.5	54	57.4	59	56.2
TOTAL	11	100	94	100	105	100

P-value = 0.5; OR=1.6; CI 95% (0.4-5.6)

Source: Primary data, 2021

According to Table 1, 6 (54.5%) of the 11 cases of cervical cancer and 40 (46.2%) of the 94 controls who visited the Oncology Polyclinic in 2021 were Papuan. The chi-square statistic test revealed a P value of 0.5, indicating that there was no significant link between ethnicity and the incidence of cervical cancer. The results of the study are known to be OR: 1.6, but the tribe variable is not significant because the bottom and upper values both include the number 1.

3.2. The Relationship between the Parity and the Incidence of Cervical Cancer

Table 2: Chi-square and OR analysis between the parity and the incidence of cervical cancer at the DOK II Jayapura Hospital in 2021

Parity	Cases		Controls		Total	%
	n	%	n	%		
Multipara	11	11	78	83.0	89	84.8
<u>Nullipara</u>	0	0	16	17.0	16	15.2
TOTAL	11	100	94	100	105	100

P-value = 0.2; OR=0.87; CI 95% (0.8-0.9)

Source: Primary data, 2021

Based on Table 2, it is known that female patients who came to visit the Oncology Clinic in 2021 showed that of 11 cases 11 (100%) were multiparous and from 94 controls there were 78 (89%) multiparous. The results of the chi square analysis showed that the p Value of 0.20 or the parity relationship with cervical cancer was not

significant. The results of the OR analysis revealed that $OR < 1$ or parity was not a risk factor for cervical cancer.

3.3. The Relationship between the duration of use of oral contraceptives and the Incidence of Cervical Cancer

Table 3: Chi-square and OR analysis between the duration of use of oral contraceptives and the incidence of cervical cancer in the DOK II Jayapura Hospital in 2021

Duration of Use of Oral Contraceptives	Cases		Controls		Total	%
	n	%	n	%		
> 5 years old	3	27.3	18	19.1	21	20.0
≤ 5 years old	8	72.7	76	80.9	84	80.0
TOTAL	11	100	94	100	105	100

P-value = 0.19; OR=0.28; CI 95% (0.05-1.4)

Source: Primary data, 2021

Based on Table 3, female patients who came to visit the Oncology Polyclinic in 2021 showed that from 11 cases, there were 3 (27.3%) who had used oral contraceptives > 5 years. Meanwhile, of the 94 controls, 18 (19.1%) had oral contraceptive use > 5 years. The results of the chi-square test showed that the P value of 0.19 or the relationship between the use of oral contraceptives was not significant and the $OR < 1$ means that the use of oral contraceptives was not a risk factor for cervical cancer.

4. Discussion

4.1. Relationship between Tribe and the Incidence of Cervical Cancer

The results showed that from 11 cases of cervical cancer, 6 (54.5%) were Papuan and from 94 controls, 40 cases (46.2%) were Papuan. The results of the chi square statistical test show that P value: 0.5 or it is interpreted that the relationship between ethnicity and the incidence of cervical cancer is not significant. The results of the analysis of the magnitude of the risk are known to be OR: 1.6 but because the lower and upper values include the number 1, the Tribe variable is not significant.

The findings of this study contradict those of Sharma's study, which found a greater prevalence of HPV in India's tribal communities. The reason for this is that indigenous people have a poor understanding of health and hygiene. HPV infection was found to be twice as common among pre-adolescent girls in ethnic groups as it was among girls their age in Delhi City. Overall, the prevalence of HPV increases with age in India. The incidence is 6.6 percent in pre-adolescent girls. When they were in their teens, the percentage increased to 11.4 percent. The highest prevalence was 19.2 percent among those aged 18 to 25 [4].

Up to 65 percent of Indian tribal girls are infected with the high-risk HPV virus. Then there's HPV type 16, which causes cervical cancer in 50.4 percent of people. The high frequency of HPV infection among Indian

tribal women is assumed to be the result of their lifestyle and sexual conduct. They start menstruating too soon, at the age of less than 12 years, and have a lot of sexual activity. Multiple pregnancies, high parity, malnutrition, and immunodeficiency are all linked to having multiple sexual partners. Immunodeficiency is a disorder in which the immune system's ability to fight disease and infection is impaired. As a result, they're more susceptible to infections and the growth of malignant cells, which can lead to an increase in HPV infection. Women who are exposed to sexual activity have a higher risk of developing HPV because their genital organs are young, making them more susceptible to infection. HPV was also found in sexually active young women's fingernail and fingertip sample. When bathing the vaginal area, transmission can happen. This indicates that ethnic Indian women pay less attention to keeping their limbs clean, allowing HPV to remain attached to the nails. Because HPV can be transmitted in a variety of ways, it is vital to plan ahead by administering the HPV vaccine. Women receive the vaccine in three doses. The first and second doses are separated by 1-2 months, and the third dose is given 6 months following the first [5].

Because Papuan and non-Papuan ethnic groups had many of the same characteristics in education, age, and living environment, the results of this study found things that were different and did not match the theory that ethnic groups were at risk for cancer incidence. Of course, ethnicity did not influence sexual behavior, cultures at risk for cervical cancer. There are some other factors that influence the occurrence of cervical cancer.

4.2. Relationship between the Parity and the Incidence of Cervical Cancer

The results of the study between parity and the incidence of cancer found that p Value = 0.20 or the relationship between parity and cervical cancer was not significant. The results of the OR analysis revealed that OR < 1 or parity was not a risk factor for cervical cancer.

This differs from the findings of the Fitriasia's study, which indicated a substantial link between the risk of cervical cancer and the amount of alcohol consumed [6]. This outcome is also unique, women with parity > 3 children are 7 times more at risk than women with parity 3 children, according to Damayanti's study at Arifin Achmad Hospital in Riau Province (OR 3,396) [7].

The findings of this study contrast from those of Ningtias's study, which found that moms with more than three children have a 6.8 times higher risk of cervical cancer than mothers with less than three children (OR = 6.8; 95 percent CI = 2.019-22.9) [8]. This study differs from the findings of Damayanti's study at Arifin Achmad Hospital in Riau Province, which found that women with a parity of more than three children were seven times more vulnerable than women with fewer than three children (OR 3,396). According to the theory that high parity will increase cervical cancer cells in women who are positive for HPV [7].

Because of the lengthier exposure to the hormone estrogen, nulliparity can raise the risk of cervical cancer. High levels of estrogen during a woman's reproductive life, especially if not accompanied by hormonal changes during pregnancy, enhance the risks of genetically damaged cells growing and causing cancer [9].

4.3. The Relationship between the Duration of Use of Oral Contraceptives and the Incidence of Cervical Cancer

Based on the results of the study, it was found that the relationship between the length of use of oral contraceptives and cervical cancer in women who came to visit the Jayapura Regional General Hospital in June-July 2021 at the Oncology Polyclinic was not significant. The results of the statistical test obtained p value of $0.19 > 0.05$ indicating the relationship between duration of use of oral contraceptives and cervical cancer was not significant with an OR value of 0.28 which means that duration of use of oral contraceptives is not a risk factor.

This result is the same as the study conducted by Ningtiyas which found that the relationship between the use of oral contraceptives and the incidence of cervical cancer was not significant ($p = 0.31$) [8]. The results of this study are different from the results of Yuviska's study which found that there was a relationship between the use of oral contraceptives and the incidence of cancer (P-Value = 0.001; OR = 3.198) at the Regional General Hospital Dr. H Abdul Moeloek, Lampung Province [10].

Some studies believe that using oral contraceptives increases the risk of cervical gland abnormalities, but this has not been verified. Several studies, however, have found that women who use oral contraceptives for more than 5 years have a higher risk of cervical cancer than women who do not. The majority of these risk factors are linked to sexual activity and infection with sexually transmitted diseases. In the past, it was considered that infection with the herpes virus was the cause of cervical cancer. Infection with the Human Papillomavirus (HPV) has now been identified as a cause of cervical cancer, with infection with the Herpes virus and Chlamydia trachomatis as potential cofactors. The role of HIV in cervical cancer is assumed to be mediated by immune system suppression. The Centers for Disease Control and Prevention in the United States has classified cervical cancer as a kind of acquired immune deficiency syndrome (AIDS), a disease that affects HIV-positive people.

5. Conclusion

The relationship between maternal ethnicity, use of hormonal contraception, and parity with the incidence of cervical cancer was not significant at the Dok II Jayapura Regional General Hospital in 2021.

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