

Factors Related to The Incidence of Cervical Cancer in M. Djamil Hospital Padang in 2021

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ABSTRACT

Indonesia gets the third position of the countries with the highest death rate from cervical cancer in the last three years (42.2%), while West Sumatera province gets the eight position of the highest cervical cancer case. The number cervical cancer patients in M. Djamil hospital Padang in 2019 was 118 patients. The research is aimed to decide factors identified with the rate of cervical cancer in M. Djamil hospital in 2021. The type of research is analytical research with the cross-sectional design. The data collection was conducted using questionnaires with interview method. The population of the research was all the patients hospitalized in the obstetrics room of M. Djamil hospital Padang, namely 244 patients. The examining strategy utilized was consecutive sampling technique. The number of the sample was 96 patients. The data processing was carried out manually and the information examination was led utilizing univariate and bivariate investigation. The aftereffect of the research showed that 31.2% respondents suffered from cervical cancer, 41.7% respondents have a low level of education, 34.4% respondents had sexual intercourse below 20 years old, 17.7% respondents took oral contraceptive. The result of chi square statistical test showed the relation the education level and the frequency of cervical malignant growth was $p = 0.04$ ($p < 0.05$), the relation of the first age of sexual intercourse and the frequency of cervical malignant growth was $p = 0.000$ ($p < 0.05$), and the relation of the use of oral contraceptive and the frequency of cervical malignant growth was $p = 0.0001$ ($p < 0.05$). The conclusion: there was a relation between the level of education, the first age of sexual intercourse and the use of oral contraceptive with the incidence of cervical cancer, so it is expected that health workers socialize and increase the patients' knowledge about cervical cancer, avoid using oral contraceptive and motivate societies to carry out early detection of cervical cancer through the IVA test.

Keywords: *cervical cancer, education level, the first age of sexual intercourse, the use of oral contraceptive.*

1. INTRODUCTION

Cervical malignant growth is a disease that happens in the uterine cervix, a region the female reproductive organs which is the passageway to the uterus that is situated between the uterus and the intercourse opening (vagina).[1] The cervical malignant growth is perhaps the deadliest kind of disease in ladies, notwithstanding bosom malignancy.

Cervical cancer is caused by the continuous infection from Human Papilloma Virus (HPV) oncogenic type (which has the potential to cause cancer). The persistent infection will cause abnormal cell which eventually leads to the development of cancer. The HPV infection

generally occurs after women have sexual intercourse. Transmission of this virus may occur either by means of transmission through genital organs to genital organs, orally to the genitals, or manually to the genitals.

Global Burden Cancer (GLOBOCAN) data, the cervical cancer ranked 7th globally in terms of the incidence of cancer in the world, and Indonesia ranked 3rd of the countries with the highest number of deaths in the world due to cervical cancer in the last 3 years namely 42.4 per 100.000 women. According to Basic Health Research (Riskesdas) in 2018, incident of cancer in Indonesia reached 1.79 per 1.000 population, increased from 2013 as much 1.4 per 1.000 population. This research also found

that the highest prevalence was in Yogyakarta as much 4.86 per 1.000 population, followed by West Sumatera 2.47 and Gorontalo 2.445. According to Indonesia Health Profile data in 2019, it was found 84.185 positive IVA, 28.910 breast cancer, 5.015 cervical cancer suspects, and 2.910 breast cancer suspects 8. West Sumatera ranked as the 8th provinces with the highest cervical cancer case. From 164.814 women aged 30-50 years old in West Sumatera, there were 2.178 women with positive IVA and 174 women suspected of cervical cancer⁵. Based on report of Padang public health Agency in 2020, there were 136 women aged 30-50 years old with positive IVA in 2019, while there were 118 cervical disease patients in Dr. M. Djamil medical clinic Padang in 2019.

Research held by Aziyah et al at Dr. Kariadi hospital Semarang in 2016 stated that there were 54 out of 68 respondents (79.41%) suffered from cervical cancer that has low level of education, 57 respondents had the primary sex at the age below 20 years old, and 46 respondents (80.70%) suffered from cervical cancer. In addition, this research showed that from 23 respondents with contraceptive pill, there were 21 respondents (91.30%) belonged to the category of cervical cancer.^[2]

This is in accordance with research led by Ningsih et al at Dr. Sardjito hospital Yogyakarta in 2017 which showed that the use of oral contraceptive/pills has a 3.4 times higher risk, while parity, circumcision and smoking were not associated with cervical cancer¹³. Research held by Wanda et al at Dr. M. Djamil hospital Padang in 2017 showed that patients who had sexual intercourse before 20 years old tend to suffer from cervical cancer as much 56.2%. Patients with a history of using hormonal contraception within 5 years were more likely to suffer from cervical cancer as much 62.1% and parity was not associated with the incidence of cervical cancer.^[3]

Based on the background mentioned above the researcher conducted the research about the factors related to the incidence of cervical cancer in obstetrics gynecology and oncology room of Government General Hospital Padang in 2021. The research is aimed to find out the factors related to the incidence of cervical cancer in obstetrics gynecology and oncology room of M. Djamil hospital Padang in 2021.

2. MATERIAL AND METHODS

The kind of exploration is scientific with Cross Sectional plan, it is an examination that studies the correlation between exposure or risk factors (independent) with consequences or effects (dependent) by collecting data simultaneously at

the same time between risk factors and their effects. The research was held in obstetrics gynecology and oncology room of Government General Hospital Padang. It was conducted from January to July 2021. The population was all patients hospitalized in obstetrics room of Government General Hospital Dr. M. Djamil Padang from June 9th, 2021 to July 30th, 2021 as much 244 patients. The sampling technique used was Non-Probability Sampling with Consecutive Sampling approach. The sample taken was the patients hospitalized in obstetrics gynecology and oncology room of Government General Hospital Dr. M. Djamil Padang as much 96 patients. The information assortment was completed by utilizing a data collection instrument in the form of a questionnaire containing questions about mother’s biodata (name, age, last education, husband’s job, hospitalization guarantee), the first age of having sexual intercourse, and the use of oral contraception. Data was obtained directly by interviewing the patients hospitalized in obstetrics gynecology and oncology room of Government General Hospital Dr. M. Djamil Padang. Information preparing was done manually by editing, coding, entry, tabulating and cleaning. Data was analyzed by using univariate analysis in the form of a frequency distribution table and bivariate analysis was done to see the relation between the independent variable and dependent variable. The analysis technique used was chi-square namely looking for the relation and proving each relation between two variables with a level of confidence 95%. To see the significance of the statistical test, a significance limit of 0.05 was used so that if $p < 0.05$, it means H_0 was not accepted and H_a was accepted, so there was a connection between the free factor and ward variable, and if $p \geq 0.05$, it means H_0 was accepted and H_a was not accepted, so there was no connection between the autonomous variable and the reliant variable. ^[4]

3. RESULTS

Tabel 1. Frequency Distribution of Incidence of Cervical Cancer in Obstetric Gynecology and Oncology Room of Dr. M. Djamil Padang Hospital

| No | Incidence of Cervical Cancer | f | % |
|-----|------------------------------|----|------|
| 1 | Yes | 30 | 31,2 |
| 2 | No | 66 | 68,8 |
| Sum | | 96 | 100 |

Level of Education

Fourty out of ninety-six respondents (41.7%) have low level of education in obstetric gynecology and

oncology room of Government General Hospital M. Djamil Padang in 2021.

Tabel 2. Recurrence Distribution of Respondent Level of Education in Obstetric Gynecology and Oncology Room of Government General Hospital M.Djamil Padang

| No | Level of Education | f | % |
|-----|--------------------|----|------|
| 1 | Low | 40 | 41,7 |
| 2 | High | 56 | 58,3 |
| Sum | | 96 | 100 |

Age of Having Sexual Intercourse

Thirty-three out of ninety-six respondents (34.4%) had sexual intercourse below 20 years old in obstetric gynecology and oncology room of Government General Hospital Dr. M. Djamil Padang in 2021.

Table 3. Recurrence Distribution of Age of Having Sexual Intercourse in Obstetric Gynecology and Oncology Room of Government General Hospital Djamil Padang

| No | First Age of Having Sexual Intercourse | f | % |
|-----|--|----|------|
| 1 | Risky | 33 | 34,4 |
| 2 | Unrisky | 63 | 65,6 |
| Sum | | 96 | 100 |

Oral Contraception Use

Seventeen out of ninety-six respondents (17.7%) had ever used risky oral contraception in obstetric gynecology and oncology room of Dr. M. Djamil Padang hospital in 2021

Tabel 4. Frequency Distribution of Oral Contraception Use in Obstetric Gynecology and Oncology of Dr. M.Djamil Padang Hospital

| No | Oral Contraception Use | f | % |
|-----|------------------------|----|------|
| 1 | Risky | 17 | 17,7 |
| 2 | Unrisky | 79 | 82,3 |
| Sum | | 96 | 100 |

Relation Between Level of Education and Incidence of Cervical Cancer

Seventeen out of forty respondents (17.7%) with low level of education suffered from cervical cancer. The result of Chi-Square factual test showed p esteem 0.04 ($p < 0.05$), it means there was the relation between the level of education and

the incidence of cervical cancer in obstetric gynecology and oncology room of Government General Hospital M. Djamil Padang in 2021. Value OR = 2.4, it means respondents with low level of education had a risk to suffer from cervical cancer as much 2.4 times compared to the ones with high level of education.

Tabel 5. Relation Between Level of Education and Incidence of Cervical Cancer in Obstetric Gynecology and Oncology Room of Dr. M.Djamil Padang Hospital

| No | Level of Education | Cervical Cancer | | | | N | % |
|-----|--------------------|-----------------|------|----|------|----|------|
| | | Yes | | No | | | |
| | | f | % | F | % | | |
| 1 | Low | 17 | 17,7 | 23 | 24 | 40 | 41,7 |
| 2 | High | 13 | 13,5 | 43 | 44,8 | 56 | 58,3 |
| Sum | | 30 | 31,2 | 66 | 68,8 | 96 | 100 |

Relation Between First Age of Having Sexual Intercourse and Incidence of Cervical Cancer

Eighteen out of thirty-three respondents (18.7%) who had sexual intercourse below 20 years old suffered from cervical cancer. The result of Chi-Square factual test showed p esteem 0.000 ($p < 0.05$), it means there was a relation between age of having sexual intercourse and incidence of cervical cancer in obstetric gynecology and oncology room of Dr. M. Djamil Padang hospital in 2021. Value OR = 5.1, it means respondents who had first sexual intercourse below 20 years old had a risk to suffer from cervical cancer as much 5.1 times compared to the ones who did it above 20 years old.

Tabel 6. Relation Between First Age of Having Sexual Intercourse and Incidence of Cervical Cancer in Obstetric Gynecology and Oncology room of Dr. M.Djamil Padang Hospital

| No | First Age of Having Sexual Intercourse | Cervical Cancer | | | | N | % |
|-----|--|-----------------|------|----|------|----|------|
| | | Yes | | No | | | |
| | | f | % | F | % | | |
| 1 | Risky | 18 | 18,7 | 15 | 15,7 | 33 | 34,4 |
| 2 | Unrisky | 12 | 12,5 | 51 | 53,1 | 63 | 65,6 |
| Sum | | 30 | 31,2 | 66 | 68,8 | 96 | 100 |

Relation Between Oral Contraception Use and Incidence of Cervical Cancer

Eleven out of seventeen respondents (11.4%) who used oral contraception suffered from cervical cancer. The result of Chi-Square statistical test showed p value 0.001 ($p < 0.05$), it means there was a relation between oral contraception use and

incidence of cervical cancer in obstetric gynecology and oncology room of Dr. M. Djamil Padang hospital in 2021. Value OR = 5.8, it means respondents who used oral contraception had a risk to suffer from cervical cancer as much 5.8 times compared to the ones who didn't use it.

Tabel 7. Relation Between Oral Contraception Use and Incidence of Cervical Cancer in Obstetric Gynekology and Oncology Room of Dr. M. Djamil Padang Hospital

| No | Oral Contraception Use | Cervical Cancer | | | | N | % |
|-----|------------------------|-----------------|------|----|------|----|------|
| | | Yes | | No | | | |
| | | f | % | F | % | | |
| 1 | Risky | 11 | 11,4 | 6 | 6,3 | 17 | 17,7 |
| 2 | Unrisky | 19 | 19,8 | 60 | 62,5 | 79 | 82,3 |
| Sum | | 30 | 31,2 | 66 | 68,8 | 96 | 100 |

4. DISCUSSION

The result of the reserach showed that less than half of patients had cervical cancer. The result is in accordance with the reserach directed by Wanda et al at Dr. M. Djamil Padang hospital in 2017, it was found that 37.5% patients had cervical cancer¹⁴. Cervical Cancer is a cervical malignancy caused by high-risk oncogenic group HPV (Human Papiloma Virus) infection, especially 16 and 18 and their phylogeny. Cervical cancer at an early stage frequently has no symptoms. However, after developing into cancer, there are symptoms of vaginal discharge that do not heal even after treatment, cloudy and foul-smelling vaginal discharge, bleeding after sexual intercourse, bleeding outside the menstrual cycle, etc. At an advanced stage where there has been spread to surrounding organs, there may be complaints of pelvic area pain, difficulty urinating, bloody bowel movements, etc.^[5]

The aftereffect of examination additionally showed that practically 50% of the patients have low degree of training. The outcome is practically equivalent to the exploration directed by Shandiz et al (2020) about the patients' level of education and cervical cancer where only a few respondents (12.1%) with an education level below and almost all respondents (87.9%) with a higher education level. The research result is likewise in accordance with the exploration led by Magdalena et al (2021) about the relation between the characteristic and the

incidence of cervical cancer where there were 36.8% respondents with a low education level.^[6]

The level of schooling is the phase of instruction not really settled dependent fair and square of advancement of understudies, the objectives to be accomplished and the readiness to be created. The degree of instruction affects changes in perspectives and conduct of sound living. The more significant level of schooling will make it simpler for an individual or society to retain infromation and carry out it in every day conduct and way of life, particularly as far as wellbeing.

Less than half of the respondents had sexual intercourse at early young age (< 20 years old). The result of the research is almost the same as the research conducted by Musfirah at Dr. Wahidin Sudirohusodo Makassar hospital in 2018 about the risk factors for cervical cancer where less than half of respondents (31.6%) got the first married below twenty years old. The oral contraception use in this research was less than half. The result of the research is almost the same as the research conducted by Musfirah at Dr. Wahidin Sudirohusodo Makassar hospital in 2018 about the risk factors for cervical cancer where less than half of respondents (36.8%) had ever used oral contraception.^[7] The oral contraceptive method is one of the hormonal contraceptive methods. The hormones contained in this contraceptive are synthetic estrogen and progesterone hormones. The estrogen hormone functions to stimulate growth and development, which causes growth in both size and number of cells in various female reproductive organs, one of which is the uterine cervix. The progesteron hormone changes the consistency of the uterine cervix so that there is a mucus blockage that forms in the cervix so that sperm cannot be penetrated.^[8] Some of the efficacies of progesterone are thickening cervical mucus so that it blocks sperm penetration which causes impaired capacity of spermatozoon to enter the ovum and prevents implantation. Boredomfrom using oral contraceptives regularly every day also allows low use of oral contraceptives.

The result of statistical test of the relation between the level of education and the incidence of cervical cancer showed p value 0.044 ($p < 0.05$), it means there was a relation between the level of education and the incidence of cervical cancer. Value OR = 2.4, it means the respondents with low level of education had a risk to have cervical cancer as much 2.4 times compared to the respondents with high level of education. This research is almost the same as the research conducted by Fanni about relation between the parity and the level of education and the incidence of cervical cancer at Moewardi Hospital in 2019 where there was a

relation between the level of education and cervical cancer ($p = 0.029$)⁴¹. According to Maville, people with a higher level of education tend to have a higher practical status and take part in solid and useful conduct sometime down the road. Instruction can influence the degree of comprehension among the public culture, individuals frequently don't have the information base to realize what causes sickness, not to mention how to forestall its development[9]

The result test of the relation between the first age of having sexual intercourse and the incidence of cervical cancer showed p value 0.000 ($p < 0.05$), it means there was a relation between the first age of having sexual intercourse and the incidence of cervical cancer. Value OR = 5.1, where the respondents who had the first sexual intercourse below 20 years old, had a risk to have cervical cancer as much 5.1 times compared to the ones who did it above 20 years old. This examination is as per research coordinated by Ningsih et al at Dr. Sardjito Yogyakarta hospital in 2017 where the respondents who had the first sexual intercourse below 20 years old, had a risk 2.41 times to have cervical cancer compared to the ones who did it at same 20 years old. The sexual intercourse below 20 years old can cause cervical cancer because at the age cell changes in the cervix are in a very active phase. When cells divide actively, (metaplasia) there should be no contact with external objects into male genitalia and sperm cells. The entry of foreign objects causes abnormal cell development¹. According to the research assumption, woman has sexual intercourse below 20 years old the more likely she gets cervical cancer. The cervical immaturity is a risk factor because it is susceptible to HPV infection. At this time the process of cell metaplasia is greatly increased so that there is a risk of causing abnormal cell development due to the damage the cervical epithelial tissue or vaginal walls due to the sexual activity. This can be prevented by not having free sex and for women to get married at a minimum age of 21 years old according to the ideal age for married women set by the National Family Planning Coordinating Board.

The statistical test result of the relation between the oral contraceptive use and the incidence of cervical cancer showed value $p = 0.001$ ($p < 0.05$), it means there was a relation between the oral contraceptive use and the frequency of cervical cancer. Value OR = 5.8, it means the respondents who used oral contraceptive had a risk to have cervical cancer 5.8 times compared to the ones who did not used oral contraceptive. The research is almost the same as the research directed by Ningsih et al that there was

a relation between the oral contraceptive use and the incidence of cervical cancer¹³. The research is in line with the research directed by Asthana, Busa, and Labani that the cervical cancer patients who used oral contraceptives had value OR 1.77 compared to the ones who did not have cervical cancer. Theoretically, the mechanism that may play changes in cervical mucus that can increase tissue susceptibility, changes in the immune response that increase susceptibility to virus infections in the cervix so that it can stimulate the development of abnormal cervical lesions. There is a tendency that excessive estrogen causes an increased risk of breast, cervical, uterine cancer in women, prostate and testicular cancer in men. The hormone estrogen works for cell growth that promotes cancer, while progesterone protects excessive cell growth. The balance of two hormones keeps the cervical cells normal. Long-term use of oral contraceptives can cause vaginal dryness. Reduced vaginal fluid causes irritation and pain during intercourse which makes vaginal infections more prone to occur. The hormones contained in the oral contraceptives can cause hypersecretion and proliferation of endometrial and cervical glands. The changes in the cervical mucus increase susceptibility to virus infection in the cervix and can stimulate the development of abnormal cervical lesions.

5. CONCLUSION

Based on the research result about the factors identified with the rate of cervical cancer in obstetric gynecology and oncology room of Government General Hospital M. Djamil Padang in 2021, it can be concluded that less than half of the patients suffered from cervical cancer, almost half of the patients had low level of education, less than half of the patients had the first sexual intercourse below 20 years old, few patients used oral contraceptives. There was a relation between the level of education, the first age of having sexual intercourse, and the oral contraception use and the incidence of cervical cancer in obstetric gynecology and oncology room of Dr. M. Djamil Padang hospital in 2021.

REFERENCES

- [1] R. Diananda, "Mengenai seluk beluk kanker," *Yogyakarta: Katahati*, 2007.
- [2] K. K. RI, "Hasil utama riskesmas 2018," *Jakarta Kemenkes RI*, 2018.
- [3] D. Wijaya, "Pembunuh ganas itu bernama kanker serviks," 2010.

- [4] A. Aziyah, S. Sumarni, and N. Ngadiyono, "Faktor Resiko Yang Berhubungan Dengan Kejadian Kanker Serviks; Studi Kasus Di Rsup Dr. Kariadi Semarang," *J. Ris. Kesehat.*, vol. 6, no. 1, pp. 20–25, 2017.
- [5] D. P. Sulistiya, D. Pramono, and D. Nurdiati, "Faktor-faktor yang berhubungan dengan kejadian kanker serviks di rumah sakit Sardjito Yogyakarta," *Ber. Kedokt. Masy.*, vol. 33, no. 3, pp. 125–130, 2017.
- [6] M. Llamas, J. A. Magdalena, S. Greses, E. Tomás-Pejó, and C. González-Fernández, "Insights on the microbial communities developed during the anaerobic fermentation of raw and pretreated microalgae biomass," *Chemosphere*, vol. 263, p. 127942, 2021.
- [7] M. Musfirah, "Faktor Risiko Kejadian Kanker Serviks Di RSUP Dr. Wahidin Sudirohusodo Makassar," *J-KESMAS J. Kesehat. Masy.*, vol. 4, no. 1, pp. 1–15, 2019.
- [8] S. Handayani, "Buku ajar pelayanan keluarga berencana," *Yogyakarta: Pustaka Rihama*, vol. 76, 2010.
- [9] D. S. Rahayu, "Asuhan Ibu dengan kanker serviks," 2015.