Contents lists available at IOCScience

Science Midwifery

journal homepage: www.midwifery.iocspublisher.org

CORRELATIONS BETWEEN THE AGE OF FIRST MARRIED, CONTRACEPTION USE AND FAMILY HISTORY WITH CERVICAL PRECANCER IN WOMEN OF CHILDBEARING AGE AT METRO CITY HEALTH CENTER

Yuliawati[1], Martini[2], Septi Widiyanti[3]

[123]Poltekkes Tanjungkarang, Jl. Soekarno Hatta No.1, Hajimena, Lampung 35145, Indonesia

A R T I C L E I N F O

Keywords:

Contraceptive Use,
Family History,
First Age of Marriage,
Pre Cervical Cancer.

ABSTRACT

Cervical cancer is one of the main causes of death in women not only in Indonesia but also in the world. Cervical cancer can cause damage to other organs and can cause death. The purpose of the study was to determine the relationship between age at first marriage, use of contraceptives, family history and the incidence of cervical precancer in women of childbearing age at the Metro City Health Center. This research is a case control. The sample size is 72 respondents divided into 11 case groups: 61 control groups. Sample selection using Simple Random Sampling. Secondary data obtained from the medical records and primary data obtained by interview. The results from 72 respondents turned out to be: Proportion: age at first marriage Age 20 years: 38.9%, hormonal contraception: 63.9%, There is no relationship between the incidence of cervical pre-cancer with age at first marriage (P value = 1000), using hormonal contraception (P value = 0.048) and There is a significant relationship between pre-cervical cancer and a family history (OR = 0.116) means that respondents who have a family history have 0.116 times the chance of IVA (+) compared to respondents who have no family history of cervical cancer.

E-mail:
martini@poltekkes-tjk.ac.id

1. Introduction

These One type of cancer that causes death is cervical cancer which is a gynecological cancer and it is the second most common cause of death in the world. The incidence of cervical cancer is estimated to be 80% in developing countries due to infection from the Human Papilloma Virus (HPV). Cervical cancer is a health problem in various countries including Indonesia (Parmin et al., 2019)

Cervical cancer is one of the leading causes of death in women not only in Indonesia but also in the world. A high stage of cervical cancer can result a damage to other organs of the body and cause death (Bante et al., 2019). Early detection of cervical cancer performed by using the Visual Inspection with Acetic Acid (IVA) examination method for prevention and control (Qura et al., 2019) .The IVA examination used today is quite accurate in detecting cervical precancerous. The purpose of IVA examination is to detect the presence of lesions early, so that the change of cervical precancerous lesions to cervical cancer can be prevented appropriately and quickly (Wantini et al., 2019).

One of the main causes of cervical cancer is the Human Papilloma Virus. This virus is exclusive and specific because it can only grow and attack human cells, especially in the epithelial cells of the cervix. HPV is a very small virus and can be transmitted when the vagina is injured during sexual intercourse. HPV is a group of viruses consisting of about 150 types of viruses that can infect cells on the surface of the skin (Maver & Poljak, 2020).

The prevalence of cervical cancer in Indonesia ranked second after breast cancer. The incidence of cervical cancer reached 17.2% of the 32,469 cases of cancer. Cervical cancer death rate reached 18.4% of 18,279 cases of cancer death (World Health Organization, 2019).
The results of the Metro City health office report in 2017 stated that the number of positive IVA was 162 cases (7.24%) out of 2,237 who conducted IVA examinations (Metro City Health Office, 2018). In 2018 there was a decrease in cases (0.20%), IVA positive 44 cases (7.04%) from 625 who conducted IVA examinations in Metro City.

Cervical cancer can be minimized with several prevention through screening and vaccination. Screening is done with pap smear and IVA examinations. Vaccinate with the HPV vaccine. Other prevention is by having safe sexual intercourse using condoms and starting a healthy lifestyle. The medical treatment for cervical cancers depends on the cancer stage, including surgery, radiotherapy, chemotherapy, rehabilitation and palliative therapy (Qura et al., 2019).

Cervical cancer is not only caused by a single cause, but also influenced by a number of risk factors. Risk factors for pre-cervical cancer include, young marriage (< 20 years), exposure to Sexually Transmitted Infections (STIs), exposure to cigarette smoke, use of hormonal contraceptives, age, family history, and personal hygiene (Kassa, 2018) unds.

2. Research Methods

This study used a Case Control design that looked at the dependent variables of precancerous cervix in women of childbearing age and independent variables of first-time marriage age factors, contraceptive use and family history. This research was conducted at the Metro City Regional Health Center.

The population in this study was all women of childbearing age who conducted IVA examinations at the Metro City Regional Health Center (110 acceptors). This population consists of case populations and control populations. The case population is women of childbearing age who perform IVA examinations with positive results, while the control population is women of childbearing age who do IVA examinations with negative result (normal).
The required sample was determined using lameshow sample size formula. Sample selection method using Simple Random Sampling The total sample was 72 consisted of 11 case group respondents and 61 control group respondents.

Data collection uses primary data and secondary data. Primary data is obtained by interview when respondents control / re-visit to get contraceptive services, but if respondents do not visit health services then respondents are reviewed for data with mobile phone contacts. And secondary data was obtained from the medical records of the Metro City Health Center which was carried out in September-November 2021. Data analysis uses univariate and bivariate analysis.

3. Result and Discussion

3.1 Result

a. Univariate Analysis

Table 1
Frequency Distribution of Respondents of Research Variables

Variable	N	%
1. Cervical Pre-cancer		
a. IVA Negative	61	84,7
b. IVA Positive	11	15,3
2. Young Marriage		
a. Age ≥ 20 years old	44	61,1
b. Age < 20 years old	28,	38,9
3. Contraception		
a. Non hormonal	26	36,1
b. Hormonal	46	63,9
4. Family history		
a. Absence	69	95,8
b. Presence	3	4,2

Contents lists available at IOCScience

Science Midwifery

journal homepage: www.midwifery.iocspublisher.org

The table above shows that in the Metro City Health Center Working Area in 2022 of the 72 respondents who conducted a Visual Inspection examination of Acetic Acid (IVA) turned out to be proportion: there were 15.3% IVA positive (positive cervical precancer), young marriages 38.9%, uses of hormonal contraceptives 63.9%, and families had a history of cervical cancer 4.2%.

b. Bivariate Analysis

a) Correlation between the first age of Married with Cervical Precancer Incidence

Table 2
Correlation between the first age of Married with Cervical Precancer Incidence

Age at First Marriage	Cervical Pre-cancer				n	%	OR (95%) P Value
	IVA (+)		IVA (-)				
	n	%	n	%			
< 20 Years	4	14,3	24	85,7	28	100	0,881 0,233-3,336 1,000
≥ 20 Years	7	15,9	37	84,1	44	100	
Amount	11	15,3	61	84,7	72	100	

The results of the analysis of the correlation between the age of first marriage and the incidence of cervical pre-cancer showed that there were 4 (14.3%) respondents aged < 20 years who had an IVA examination (+), while respondents aged 20 years were 7 (15.9%) who the results of the IVA examination (+). So it can be concluded that there is no difference in the proportion of the incidence of pre-cervical cancer with the age of first marriage (there is no significant relationship between the incidence of pre-cervical cancer and the age of first marriage). Respondents who are married < 20 years have a 0.881 times chance of having an IVA (+) compared to respondents who are 20 years old.

b) Correlation between Hormonal Contraception with Cervical Precancer Incidence

Table 3
Correlation between Hormonal Contraception with Cervical Precancer Incidence

Current Used Contraception	Cervical Pre-cancer				n	%	OR (95%) P Value
	IVA (+)		IVA (-)				
	n	%	n	%			
Hormonal	10	21,7	36	78,3	46	100	6,944
Non Hormonal	1	3,8	25	96,2	26	100	0,835-57,7
Amount	11	15,3	61	84,7	72	100	0,048

The results of the analysis of the relationship between the use of contraception and the incidence of cervical pre-cancer showed that there were 10 (21.7%) respondents who used hormonal contraception with the results of the IVA examination (+), while the respondents who did not use hormonal contraception were 1 (3.8%) who had the results of the IVA examination (+). The results of statistical tests obtained a P value = 0.048, it can be concluded that there is a difference in the proportion of pre-cervical cancer using hormonal contraception (there is a significant relationship between the incidence of cervical pre-cancer using hormonal contraception). Those who use hormonal contraception has a 6.944 times chance of IVA (+) compared to non-hormonal responses.

c) Correlation between Family History with Cervical Precancer Incidence

Table 4
Correlation between Hormonal Contraception with Cervical Precancer Incidence

Pre-Cancer in Family History	Cervical Pre-cancer				n	%	OR (95%) P Value
	IVA (+)		IVA (-)				
	n	%	n	%			
There's History	3	100	0	0	3	100	0,116
No History	8	11,6	61	88,4	69	100	0,060-0,222

Pre-Cancer in Family History	Cervical Pre-cancer				n	%	OR (95%) P Value
	IVA (+)		IVA (-)				
	n	%	n	%			
Amount	11	15,3	61	84,7	72	100	0,003

The results of the correlation analysis between a family history of having cervical cancer and the incidence of cervical pre-cancer were found that 3 (100%) respondents who had a family history of cervical cancer with an IVA examination result (+), while respondents who did not have a family history of cervical cancer did not exist (0 %) the results of the IVA examination (+). The results of the statistical test obtained a value of P = 0.003 so it can be concluded that there is a difference in the proportion of the incidence of pre-cervical cancer with a family history of having cervical cancer (there is a significant relationship between the incidence of pre-cervical cancer and a family history of having cervical cancer). = 0.116 means that respondents who have a family history of cervical cancer have 0.116 times the chance of IVA (+) compared to respondents who have no family history of cervical cancer.

3.2 Discussion

Getting married or having sexual intercourse under 20 years has a great risk of developing cervical cancer, due to the formation of epithelial cells or the lining of the vaginal and cervical walls that are not fully mature, caused by hormonal imbalances. At a young age, the mucosal cells in the cervix are immature, meaning that they are still susceptible to stimuli so they are not ready to receive external stimuli. Including chemicals carried by sperm. Because it is still vulnerable, mucosal cells can turn into cancerous properties (Ramadhaningtyas & Besral, 2020).

Women who marry at a young age or start sex at a young age have a high risk of cervical cancer because SCJ (Squamo Columnar Junction) this woman is outside OUE (Osteum Uteri Eksternum), so it is easily exposed to cervical infection. According to (Thakur et al., 2015) women who have had early sexual activity, before the age of 18 years are more at high risk because cervical cells are very fragile at this young age. Cervical epithelial metaplasia in women under the age of 20 is still very high especially in the area of the transformation zone or skuamo-columner connection area (SSK), which is an area that is very prone to damage. With stimulation, the cell can grow more than the dead cell so that the changes are no longer balanced. The excess of these cells can eventually turn into cancer cells.

Women who often change partners or have many sexual partners or husbands who often change partners have a risk of developing cervical cancer. When the husband has many sexual partners and one of them is infected with cervical cancer, then when the husband is in contact with the wife directly transfers the infection to the wife. This is what then causes cervical cancer infection (Khalaf et al., 2015). Therefore, it is necessary to advise on the importance of having sexual intercourse in a healthy manner (permanent partner), to prevent or reduce the risk of developing cervical cancer even though married young.

This studies also showed that there is a correlation between hormonal contraceptive use and the incidence of cervical precancerous lesions. In the use of hormonal contraceptives found an OR value of 6,944 indicates that the use of hormonal contraceptives is a factor in the occurrence of cervical precancerous lesions. The probability of cervical precancerous lesions for mothers with the use of hormonal contraceptives is 6,944 times. Compared to the use of non-hormonal contraceptives. The study found that hormonal contraceptive use was associated with precancerous cervical events, especially mothers who used hormonal contraceptives continuously for ≥ 5 years.

The same study conducted by (Iversen et al., 2021) showed that there is a relationship between hormonal contraceptive use and the incidence of cervical precancerous lesions with a value of p = 0.013. In the use of hormonal contraceptives found an OR value of 17.8 indicates that the use of hormonal contraceptives is a factor in the occurrence of cervical precancerous lesions. The probability of cervical precancerous lesions for mothers with the use of hormonal contraceptives is 17.8 times compared to the use of non-hormonal contraceptives.

Long-term use of hormonal contaraception > 4 years is associated with an increased risk of cervical cancer. The longer a person uses hormonal contraceptives the higher the risk of getting cervical cancer. Hormones contained in hormonal contraceptives can change the sensitivity of

Contents lists available at IOCScience

Science Midwifery

journal homepage: www.midwifery.iocspublisher.org

cervical cells. Hormonal contraceptives contain the hormones estrogen and progesterone which have properties that are structurally and chemically very different even though they are functionally similar. Endogenous hormones produced by the body that have physiological properties, while exogenous hormones synthesized by plants do not guarantee physiological properties that are considered safe and this condition is suspected to give the wearer a risk of cervical cancer (Kartiani et al., 2019).

The physiological state condition of the hormone estrogen received by the estrogen hormone receptors present on the surface of the target cell in the cervix is the estrogen hormone produced by the body which is fisological in nature, namely with a steroid nucleus, which has a transcript known by the DNA present in the cell nucleus. Hormonal contraceptives used as contraceptives are not steroids but diethylstilbestrol, and are introduced into the body by injection or oral or implant will all reach the target cell that is in the estrogen hormone receptors on the surface of the cell, and then reach the nucleus of the cell for the benefit of transcribe, thus being decrypted instead of steroid nuclei, but diethylstilbesterol, so that it can cause a transcribed mess that has the potential to develop into cancer cells with the presence of promoting materials (Xu et al., 2018).

Viscosity of mucus in the cervix due to the use of birth control pills supports the occurrence of cervical cancer. In the physiological state of cervical mucus production controlled by the body's estrogen hormone in the form of clear mucus, liquid, and large in number. With the entry of hormonal contraceptives in the body, the function of cervical mucus secretion is taken over by hormonal contraceptives and produces cervical mucus that is contrary to cervical mucus which is physiologically cloudy, thick and small amounts intended to complicate the entry of sperm through the cervix, so that there is a mess of transcription orders, which has the potential to cause cervical cancer, therefore hormonal contraceptives should be used as intermediate contraceptives or their use interspersed with the use of condoms (Bante et al., 2019).

The results of the analysis of family history of having cervical cancer with cervical precancerous events obtained that the Odds Ratio (OR) analysis of family history of cervical cancer obtained OR of 0.116 and meaningful (P = 0.003) which means that mothers with a family history of cervical cancer have a 0.116 times greater risk of cervical precancerous events than mothers not with a family history of cervical cancer, A family history of cervical cancer is a risk factor for the incidence of cervical cancer. This research is in line with research conducted by (Aziyah et al., 2017), using a cross-sectional approach. This study sample total sampling with axial sampling techniques as many as 103 respondents, consisting of 68 cervical cancer respondents and 35 non-cervical cancer respondents. The results of the study found that there was a relationship between the history of heredity with cancer (p-value = 0.006, OR 5.1), with the incidence of cervical cancer at Dr. Kariadi Hospital Semarang in 2016.

Women has a greater risk of cervical cancer from a family having a history of cervical cancer than women who do not have a family history of cervical cancer (Savitri, 2015) Especially those who have a mother or sister who has cervical cancer. Some families show a higher incidence of cervical cancer. Some scientists believe that they carry a gynecetic condition that makes them more susceptible to being infected with HPV (Nurwijaya et al., 2010), therefore consider using condoms if the relationship is risky. The use of condoms will protect the cervix from direct contact of carcinogens from semen liquid.

4. Conclusion

Based on the results of research and discussion with reference to the formulation of the problem and research hypotheses at the Metro City Regional Health Center in 2022 from 72 respondents, it can be concluded that: (1)Proportion: positive cervical pre-cancer: 15.3%, age at first married age 20 years: 38.9%, exposure to cigarette smoke: 63.9%, hormonal contraception: 63.9%, parity: 29.2%, age : 41.7% family history : 4.2% at the Metro City Health Center in 2021. 2. There is no significant relationship between the incidence of cervical cancer with age at first marriage (P value = 1,000). 3. There is a significant relationship between the incidence of cervical pre-cancer using hormonal contraception (P value = 0.048). 4. There is a significant relationship between the incidence of cervical cancer with a family history of having cervical cancer (P value = 0.003). Suggestion of this research is 1. Having safe sexual intercourse for the first time at the age of 20

years old. 2. Having a periodic of IVA examinations for couples of childbearing age with wives who use hormonal contraception, women at aged 45 years and have a pre-cancer history in family. 3. Increasing the dissemination of information about the importance of IVA examination as an early detection of cervical cancer, through various counseling, as well as intensive mass media, especially for parity 3, aged 45 years and family history of pre-cancer events.

References

Ayu Wantini, N., Indrayani, N., Ilmu Kesehatan, F., Respati Yogyakarta, U., Kunci, K., & Serviks, K. (2019). Deteksi Dini Kanker Serviks dengan Inspeksi Visual Asam Asetat (IVA). Jurnal Ners Dan Kebidanan (Journal of Ners and Midwifery), 6(1), 027–034. https://doi.org/10.26699/JNK.V6I1.ART.P027-034

Aziyah, A., Sumarni, S., & Ngadiyono, N. (2017). FAKTOR RESIKO YANG BERHUBUNGAN DENGAN KEJADIAN KANKER SERVIK; STUDI KASUS DI RSUP DR. KARIADI SEMARANG. Jurnal Riset Kesehatan, 6(1), 20–25. https://doi.org/10.31983/JRK.V6I1.2085

Bante, S. A., Getie, S. A., Getu, A. A., Mulatu, K., & Fenta, S. L. (2019). Uptake of pre-cervical cancer screening and associated factors among reproductive age women in Debre Markos town, Northwest Ethiopia, 2017. BMC Public Health, 19(1), 1–9. https://doi.org/10.1186/S12889-019-7398-5/TABLES/3

Iversen, L., Fielding, S., Lidegaard, Ø., & Hannaford, P. C. (2021). Contemporary hormonal contraception and cervical cancer in women of reproductive age. International Journal of Cancer, 149(4), 769–777. https://doi.org/10.1002/IJC.33585

Kartiani, A., Irsan, diah, Mega Buana Palopo, S., Kebidanan Graha Ananda Palu, A., & Penulis, K. (2019). Hubungan Usia Nikah Penggunaan Kontrasepsi Hormonal Dan Personal Hygiene Dengan Kejadian Displasia Serviks Melalui Pemeriksaan Inspeksi Visual Asam Asetat (IVA) Di Desa Wani. Media Publikasi Penelitian Kebidanan, 2(2), 34–40. https://doi.org/10.55771/MPPK.V2I2.19

Kassa, R. T. (2018). Risk factors associated with precancerous cervical lesion among women screened at Marie Stops Ethiopia, Adama town, Ethiopia 2017: A case control study. BMC Research Notes, 11(1), 1–5. https://doi.org/10.1186/S13104-018-3244-6/TABLES/3

Khalaf, M. K., Rasheed, F. A., & Hussain, S. A. (2015). Association between Early Marriage and Other Sociomedical Characteristics with the Cervical Pap Smear Results in Iraqi Women. Advances in Sexual Medicine, 05(04), 73–82. https://doi.org/10.4236/ASM.2015.54009

Maver, P. J., & Poljak, M. (2020). Primary HPV-based cervical cancer screening in Europe: implementation status, challenges, and future plans. Clinical Microbiology and Infection, 26(5), 579–583. https://doi.org/10.1016/J.CMI.2019.09.006

Nurwijaya,H., Andrijono, & Suheimi, H., 2010. Cegah dan Deteksi Kanker Serviks. Jakarta: Elex Media Komputindo.

Parmin, N. A., Hashim, U., Gopinath, S. C. B., Nadzirah, S., Rejali, Z., Afzan, A., & Uda, M. N. A. (2019). Human Papillomavirus E6 biosensing: Current progression on early detection strategies for cervical Cancer. International Journal of Biological Macromolecules, 126, 877–890. https://doi.org/10.1016/J.IJBIOMAC.2018.12.235

Qura, U., Ansar, J., Arsyad, D. S., Dwinata, I., Ikhsan, M., & Suriah, S. (2019). THE DETERMINANTS OF CERVICAL CANCER EARLY DETECTION BEHAVIOUR WITH VIA TEST METHOD IN VISITORS OF POLI KIA-KB IN KASSI-KASSI PUBLIC HEALTH CENTER OF KOTA MAKASSAR. Epidemiology and Society Health Review (ESHR), 1(1), 17–28. https://doi.org/10.26555/ESHR.V1I1.936

Ramadhaningtyas, A., & Besral, B. (2020). Hubungan Seksual Usia Dini Dapat Meningkatkan Risiko Kanker Serviks. Jurnal Biostatistik, Kependudukan, Dan Informatika Kesehatan, 1(1), 46–56. https://doi.org/10.51181/BIKFOKES.V1I1.4054

Savitri, A.,2015. Kupas Tuntas Kanker Payudara, Leher Rahim dan Rahim.Yogyakarta: Pustaka Baru Pres.

Thakur, A., Gupta, B., Gupta, A., & Chauhan, R. (2015). Risk factors for cancer cervix among rural women of a hilly state: A case-control study. Indian Journal of Public Health, 59(1), 45. https://doi.org/10.4103/0019-557X.152862

Xu, H., Egger, S., S Velentzis, L., L O'Connell, D., Banks, E., Darlington-Brown, J., Canfell, K., & Sitas, F. (2018). Hormonal contraceptive use and smoking as risk factors for high-grade cervical intraepithelial neoplasia in unvaccinated women aged 30–44 years: A case-control study in New South Wales, Australia. Cancer Epidemiology, 55, 162–169. https://doi.org/10.1016/J.CANEP.2018.05.013