

**THE RELATIONSHIP BETWEEN SIDE EFFECTS AND  
CHEMOTHERAPY ADHERENCE OF CERVICAL CANCER PATIENTS  
AT ARIFIN ACHMAD HOSPITAL PROVINVE RIAU**

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**Abstract**

Cervical cancer is one of the cancers with the highest incidence and mortality rate in Indonesia. Based on data from Arifin Achmad Hospital Pekanbaru, the number of cervical cancer cases continues to increase every year. One of the main treatment methods for cervical cancer patients is chemotherapy. These treatments often cause a variety of side effects, such as nausea, vomiting, fatigue, hair loss, and immune disorders. These side effects not only affect the physical condition of patients, but also impact their psychology, thus lowering their motivation to continue treatment. The purpose of this study is to determine the relationship between side effects and chemotherapy adherence in cervical cancer patients at Arifin Achmad Riau Provincial Hospital. This type of research is quantitative with a correlation and cross sectional approach. The research instrument was a questionnaire on side effects and chemotherapy adherence. The research sample totaled 64 people who were taken by accidental sampling technique. Univariate and bivariate data analysis using chi square test. The results of the study showed that 34 people (53.1%) did not comply with chemotherapy, 30 respondents (45.9%) who had severe side effects, 34 people (53.1%) and 30 people (45.9%) did not comply. The results showed that there was no association between side effects and chemotherapy adherence in cervical cancer patients ( $p$ -value=0.140), it is hoped that future researchers can conduct research on other factors that affect patient adherence in carrying out therapy.

**Keywords:** Side Effects 1: Chemotherapy 2: Adherence 3: Cervical Cancer 4

**INTRODUCTION**

Cervical cancer is a disease in which malignant cells grow located in the cervix or cervix. The results of the research show that the cause of cervical cancer is the Human Papilloma Virus (HPV) virus (Rahayu & Wahyuni, 2022). The triggering factors for cervical cancer themselves are women infected with HPV, women who have sex partners, women who smoke, vaginal washing with anti-septics that is too frequent, low immunity, and the use of contraceptive pills (Ananti et al., 2020). According to Global Burden Cancer (GLOBCAN) data in the Indonesia Cancer Care Community (ICCC) article in Indonesia, cervical cancer is the disease with the second highest number of victims suffered by women after breast cancer with an incidence of around 32,469 cases (17.2%) with a mortality rate of around 18,279 people (8.8%) (Sri Atikah, 2024).

According to the World Health Organization (WHO), the number of cancer patients in 2020 in the world was 19.3 million people, of which the number of deaths was 10 million cases. Based on the WHO cancer profile in 2020, the frequency of cervical cancer worldwide is 604,127 cases. Data from the Global Burden of Cancer Study (GLOBCAN) in 2020 explained that in 2020 cancer cases in Indonesia reached 396,914 cases with a total of 234,511 deaths (Global Burden of Cancer Study, 2020). The growth rate of cervical cancer in Asia is the highest frequency of cervical disease, which is 58.2% or an estimated 351,720 people (Sri Atikah, 2024).

Based on data from Arifin Achmad Hospital, Riau Province, the total number of cervical cancer cases in Riau in 2021 was 1,053 cases. Then in 2022, cervical cancer cases increased to 1,167 cases. Based on data from the Medical Record Document of Arifin Achmad Hospital Pekanbaru in January - October 2024, the number of cervical cancer patients was 3,433 people, which is the first in cases of gynecological diseases. Chemotherapy is an anti-cancer therapy to kill tumor cells by interfering with cell reproductive functions aimed at healing, control, and palliative (Prastiwi et al., 2022). Chemotherapy also not only provides benefits for patients but also has side effects, because the chemotherapy drugs given not only destroy cancer cells but also attack healthy cells (Hermono et al., 2022).

The most common physical side effects of chemotherapy are nausea and vomiting, indigestion, alopecia, mucositis, dermatitis, fatigue, dry skin, even blackened nails and skin, loss of appetite, and damage to the spinal cord, which reduces the production of red blood cells, causing anemia and weakened immunity. The disease is caused by Human Papillomavirus (HPV) infection and is influenced by various risk factors such as risky sexual behavior, smoking, low immunity, and long-term use of oral contraceptives. According to GLOBCAN 2020 data, cervical cancer cases worldwide reached more than 600,000 cases with a high mortality rate. In Indonesia, the number reached nearly 400,000 cases with more than 230,000 deaths. These side effects can cause physical and psychological discomfort, which impacts the patient's adherence to chemotherapy. Patients often delay or discontinue therapy due to discomfort and decreased motivation. Based on initial interviews with patients at Arifin Achmad Hospital, many reported that severe side effects interfered with their daily lives and led to non-adherence to chemotherapy regimens. Therefore, this study was conducted to determine the relationship between side effects and chemotherapy adherence in cervical cancer patients at Arifin Achmad Regional Hospital, Riau Province. At Arifin Achmad Pekanbaru Hospital, the incidence of cervical cancer continues to increase every year, from 1,053 cases in 2021 to 1,167 cases in 2022, reaching more than 3,400 patients in October 2024. One of the main therapies used is chemotherapy, which works against cancer cells but also causes severe side effects such as nausea, vomiting, hair loss, fatigue, indigestion, and immune system disorders.

## RESEARCH METHODS

This study uses a quantitative method with a correlational design and a cross-sectional approach. The aim was to determine the relationship between independent variables (side effects) and dependent variables (chemotherapy adherence) at a single measurement point. The study population was all cervical cancer patients undergoing chemotherapy at Arifin Achmad Hospital Pekanbaru, with an average of 179 patients per month. Purposive sampling was used to select 64 respondents who met the inclusion criteria: cervical cancer patients who had undergone at least one chemotherapy session. The research instrument consisted of two questionnaires:

1. The side effect questionnaire, which contains 19 statements with "Yes" or "No" answers, is categorized as heavy or mild based on average scores
2. Chemotherapy attendance questionnaire, containing 5 statements categorized as "Compliant" or "Non-Compliant" based on average total scores.

### RESEARCH RESULTS

The study shows that the majority of respondents are 36-50 years old (56.3%), with a junior high school education (39.1%), and the majority are unemployed (59.4%). The most common duration of cancer was 1-3 years (71.9%).

Research results:

1. 34 respondents (53.1%) had mild side effects, while 30 respondents (46.9%) had mild side effects.
2. 34 respondents (53.1%) did not comply with chemotherapy, while 30 respondents (46.9%) complied.

Bivariate analysis using the chi-square test showed a p value of 0.133 ( $>0.05$ ), suggesting no significant association between chemotherapy side effects and the adherence of cervical cancer patients.

**Tabel 1. Frequency distribution based on respondent characteristics**

Variable	Frequency	Percentase(%)
Age		
Early adults 26-35 years old	1	1,6
Middle Adult 36-50 years old	36	56,3
Late adult >51 years	27	42,1
Total	64	100

Source: Primary Data

**Tabel 2. Distribution of respondent frequencies based on compliance in carrying out chemotherapy at Arifin Achmad Hospital, Riau Province**

Attitude	Frequency	Percentage
Obedient	30	46,9
Non-compliant	34	53,1
Total	64	100

Source: Primary Data

**Tabel 3. Frequency distribution based on side effects at Arifin Achmad Hospital Riau Province**

Side effects	Frequency	percentage
Low	30	46,9
Heavy	34	53,1
Total	64	100

Source: Primary Data

## DISCUSSION

The results showed that although the side effects of chemotherapy were quite severe, they were not significantly associated with patient adherence. Some patients persist in therapy despite experiencing side effects, likely due to family urges, motivation to recover, and an understanding of the importance of completing treatment. Middle adults (36-50 years) are the largest group undergoing chemotherapy. This age group is considered productive and carries significant family responsibilities, which can affect motivation and compliance. However, psychological burden and severe side effects such as fatigue and nausea can reduce his consistency in following the therapy schedule. Education level also plays a role in a patient's ability to understand the benefits of chemotherapy. Patients with low education (junior high school) tend to have limited knowledge about the importance of ongoing treatment, which can have an impact on non-compliance. In addition, the employment status (housewife) affects the patient's economic ability to cover transportation and medical expenses. These results are in line with previous research by Ardiyanti et al. (2023), which found that side effects are not the only factor affecting adherence; Distance, family support, and economic conditions also affect compliance. Researchers believe that to ensure patients undergo chemotherapy, surgical interventions focused on education and psychological support are needed. Healthcare providers should provide counseling, motivation, and information on how to manage side effects to prevent patients from feeling scared or overwhelmed by treatment.

## Bivariate Analysis

### Relationship of Side Effects of Cancer Patients

**Cervix in Undergoing Chemotherapy** The results of the analysis of the relationship between side effects and adherence to chemotherapy were found that there were 21 (61.8%) patients with severe side effects that did not comply with chemotherapy while patients had mild side effects, there were 17 (56.7%) adherent to chemotherapy. Based on the results of the test using the chi-square test, a p value of  $0.133 > 0.05$  and an OR value of 0.467 were obtained, meaning that there was no relationship between side effects and the adherence of cervical cancer patients in undergoing chemotherapy where patients who had severe side effects were likely to not comply with chemotherapy as much as 0.467 times compared to patients with low side effects at Arifin Achmad Hospital, Riau Province. Researchers assume that patient adherence to chemotherapy can be influenced by the patient's chemotherapy side effects, where the patient's adherence rate in undergoing chemotherapy is lower than that of patients who have high side effects. Thus, in order for patients to be obedient in undergoing chemotherapy, it is necessary to provide education to patients about the importance of undergoing chemotherapy regularly to achieve a better recovery rate. In this case, the role of health workers who handle chemotherapy patients is needed to always motivate patients so that patients are more obedient in undergoing chemotherapy.

## CONCLUSION

1. Almost half of cervical cancer patients aged 36-50 years, 36 people (56.3%), almost half with the last education of junior high school, which is 25 people (39.1%), more than half with IRT work, which is 38 people (59.4%), almost all with a period of 1- 3 years, which is 46 people (71.9%)
2. More than half of cervical cancer patients had severe chemotherapy side effects as many

- as 34 people (53.1%)
3. More than half of cervical cancer patients did not comply with chemotherapy, which was 34 people (53.1%).
  4. There was no association between side effects and compliance of cervical cancer patients in undergoing chemotherapy at Arifin Achmad Hospital, Riau Province (p value=0.140).

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