

## WHAT IS THE COST OF NOT HAVING ORGANISED CERVICAL SCREENING SERVICES?



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## LIST OF ABBREVIATIONS

| SSO       | State Statistical Office                                 |  |
|-----------|--|--|
| DRG       | Diagnostic related groups                                |  |
| ESE       | Emancipation, solidarity and equality                    |  |
| рні       | Public health institution                                |  |
| ICD-10    | International classification of diseases (10th revision) |  |
| РАР       | Pap test   |  |
| UC        | University Clinic (Hospital)                             |  |
| HIF/HIFNM | Health Insurance Fund of the Republic of North Macedonia |  |

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#### **INTRODUCTION**

The Cervical Cancer Screening Program has been implemented in Macedonia since 2012. However, even after 10 years of implementation, there is insufficient coverage of women by this Program. This is due to several factors, including insufficient funding of this program, inadequate coordination between the various program implementers, and a lack of proper monitoring of program implementation. Therefore, the European Commission noted that there is no organized cervical cancer screening in Macedonia. All this results in premature mortality in women, which can be prevented because if cervical cancer is detected in time it can be successfully treated, and thus not only prolong life but also improve the quality of life of women diagnosed with the disease.

The purpose of this analysis is to determine the impact of delayed diagnosis of cervical cancer on women's lives and on the costs associated with diagnosis, treatment, and palliative care in relation to this disease, for the state and for women. At the same time, the analysis shows that by increasing the funds allocated for this program women's lives can be saved, women's lives will be extended and their quality of life will be improved, but also the state and women will save funds.

For the purposes of the analysis, data on costs incurred by the Health Insurance Fund (HIFNM), the University Clinic (UC) for Oncology and Radiotherapy, and the Specialized Hospital for Geriatric and Palliative Medicine were used, as well as data obtained from women suffering from this disease. The data from the HIFM, the UC for oncology and radiotherapy, and the Specialized Hospital were obtained through using the procedure for access to public information. The data from the WOM women were obtained through interviews with 16 women being treated for cervical cancer at the UC for oncology and radiotherapy. 7 (seven) women were hospitalized at the Clinic, while 9 (nine) women were treated on an outpatient basis. Mortality data were obtained from the State Statistical Office.

## I. CUMULATIVE COSTS RELATED TO CERVICAL CANCER

Due to the consequences of the detection of cervical cancer only when it is at an advanced stage, every year in Macedonia, on average, 593 years of life are lost to women. Cervical cancer detected at an advanced stage has long-term consequences for the quality of life of women and their family members.

Detection of cervical cancer at an advanced stage also leads to high costs, both for the state and for women and their families. This section presents the cumulative costs incurred by the state and by women. The further chapters of the analysis describe and show in detail how the costs are calculated.

It must be emphasized that conducting comprehensive and proper quality cervical cancer screening would save women's lives, improve their quality of life and significantly reduce costs.

The estimated annual cost to the state, specifically of the HIFNM, for the treatment of women suffering from cervical cancer detected at an advanced stage, is almost 29 million denars, or more precisely 28.894.725 denars (Table 1). It must be emphasized that the real cost is higher because the HIF does not provide data on costs in specialist-consultative health care.

**Table no. 1.** Annual costs incurred by the HIFNM related to cervical cancer detected at a more advanced stage

| Description   | Amount in<br>MK Denars |
|---|------------------------|
| HIFs payments to public health<br>institutions (PHI) according to Diagnostic<br>Related Groups (real value) | 8.913.005              |
| Costs for treatment of PHI UC for oncology and radiotherapy (real value)                                    | 10.191.976             |
| Palliative care costs in PHI Special<br>Hospital for Geriatric and Palliative<br>Medicine (real value)      | 121.644                |
| HIF expenses for sick leave (estimated value)   | 9.668.100              |
| Total   | 28.894.725             |

The estimated annual cost incurred by the estimated 334<sup>1</sup> women suffering from cervical cancer detected at an advanced stage is 10.858.129 denars (Table 2). It is worth noting that women actually have more expenses than shown, because in the interviews women stated other expenses for which they could not give an exact amount, such as buying necessary products and food during hospital stays. At the same time, the calculations do not include travel expenses for women who are hospitalized in Skopje and go home for the weekends.

| Cost description                                       | The average amount<br>in MK Denars per<br>woman per year | The estimated total<br>amount in MK Denars for<br>women suffering from<br>cervical cancer annually |
|--|--|--|
| Diagnostic health services                             | 11. 043  | 3 .688.362   |
| Travel costs   | 8.807  | 2.941.538  |
| Medicines, dietary supplements, and other products     | 7.286  | 2.433.524  |
| Sick leave<br>(calculated on the basis of salary loss) | 12.795 <sup>2</sup>                                      | 1.714.530  |
| Palliative care  | 1  | 80.175   |
| Total  |  | 10.858.129   |

Table no. 2. Women's costs related to diagnosis, treatment, and palliative care for cervical cancer

The estimate is that in total the annual combined costs for the state and women related to cervical cancer are at least 39.752.854 denars. As previously stated, the actual annual costs are higher than this amount.

In addition to these costs, some women need third-party care over a period of time. The work for this care, even though it is not paid, has its value and it amounts to 21.912 denars for one woman, ie in total for women suffering from cervical cancer it would amount to 2.256.936 denars.

<sup>&</sup>lt;sup>1</sup> The average salary loss is calculated only for the women which are/were working at the time when the cervical cancer was diagnosed. According to the estimates based on the interviews with women, approximately 40% of women diagnosed with cervical cancer where working at that period.

<sup>&</sup>lt;sup>2</sup> The average salary loss is calculated only for the women which are/were working at the time when the cervical cancer was diagnosed. According to the estimates based on the interviews with women, approximately 40% of women diagnosed with cervical cancer where working at that period

### II. LOST YEARS OF LIFE

Lost years of life is a cumulative measure of premature mortality in the population. In 2016, there were 47 deaths from cervical cancer as a result of delayed diagnosis of the disease. Due to premature mortality in women, 612 years of life were lost<sup>3</sup> in 2016 alone due to cervical cancer. In 2017, there were 30 deaths from cervical cancer, and in the same year, 574 years of life were lost among women due to premature death from this disease. Table 3 shows the deaths divided by age groups, based on these data the calculations for premature mortality and lost years of life.

Premature mortality and lost years of life are irreparable losses for women and their families. But these lost years of life also mean that women have not had the opportunity to contribute to their families, their work, and society in general. Because of this, not only the sick and their families suffer from premature death, but also the whole society. At the same time, it should be emphasized that premature mortality can be prevented if cervical cancer is detected in time through organized screening.

| Year | Total | Age (in years) |       |       |       |         |    |
|------|-------|----------------|-------|-------|-------|---------|----|
|      |       | 25-34          | 35-44 | 55-64 | 65-74 | over 75 |    |
| 2016 | 47    | /              | 3     | 7     | 16    | 11      | 10 |
| 2017 | 30    | 4              | 3     | 7     | 4     | 6       | 6  |

**Table no. 3.** Overview of women who died of cervical cancer, divided by age groups (Source: State Statistical Office)

<sup>&</sup>lt;sup>3</sup> Lost years of life are calculated by adding the number of deaths at a given age and multiplying this number by the number of years remaining up to 75 years. Finally, all these values are added up to get the total number of years of life lost. Example: 4 women died at the age of 29. In that case 4 is multiplied by 46 and we get a value of 184 years. The same is true for any age at which cervical cancer deaths occur.

Note: because in the SSO data the age of women at the time of death is given by age groups, for the purposes of this analysis the mean age of women at the time of death is taken as the midpoint value of each age group (example: for the age group 25-34 years, the value of 29 years is taken)

# III. KHOW MANY FUNDS ARE NEEDED FOR SUCCESSFUL CERVICAL CANCER SCREENING?

In order to provide coverage by cervical cancer screening to 80% of women aged 24 to 60, the state needs to allocate 168.698.100 denars<sup>4</sup> for a period of three years.[2] This would mean that the Ministry of Health should provide an average of 56.566.033 denars per year for this purpose.

These funds will save between 30 and 50lives per year, and will also prevent premature loss of 590 years of life among women.

At the same time, the minimum costs incurred by the state and by women related to cervical cancer (39.7 million denars) represent 70% of the required amount that the Ministry should allocate for successful screening annually. Investing in screening will significantly reduce all these costs, i.e. it will bring savings for the state and for women and their families.

<sup>&</sup>lt;sup>4</sup> 16.344.900 denars for inviting 544.833 women aged 24 to 60; 76.276.600 denars for conducting PAP tests on 80% of the female population aged 24 to 60 years; 76.276.600 denars for cytological analysis of the performed PAP tests; 300,.000 denars for coordination of the screening by the Centers for Public Health and 500.000 denars for the activities of the mobile gynecological practice.

## IV. COSTS RELATED TO CERVICAL CANCER

#### **IV.1. Expenditures by the state**

This chapter shows the costs paid by the HIF which are related to the treatment, palliative care, and sick leave of women suffering from cervical cancer.

#### Hospital treatment costs according to DRG methodology

The Health Insurance Fund of Macedonia is an institution that pays for the health services of insured persons at all three levels of health care. The subject of the analysis was to determine the costs paid by the HIF to all Public Health Institutions and Private Health Institutions that have concluded an agreement with the HIF for health services related to the diagnosis and treatment of cervical cancer<sup>5</sup> in the period from 2016 to 2018. However, due to the way data are recorded, the HIFNM responded that it is not possible to extract expenditure data from the electronic system in respect of payments for specialist consultative health care, without disrupting the regular operation of the Fund<sup>6</sup>. Therefore, HIFNM submitted data only on the funds paid to the Public Health institutions for hospital treatment, paid according to DRG methodology<sup>7</sup>, for the period from 2016 to 2018 (Table No. 4). From the obtained data, it can be noticed that the costs for hospital treatment by the HIF are increasing from year to year. This increase is primarily due to the increase in the number of cases<sup>8</sup> of treatment from year to year, as the average cost per case does not change significantly over the years.

HIFNM has an average annual cost of 8.913.005 denars, taken as an average over the three years under consideration (2016, 2017, and 2018).

**Table no. 4.** Summary of the funds paid by the HIF for the treatment of cervical cancer, paid to the PHI according to the DRG methodology, an overview of the number of cases, and the average cost per case

| Year | Amount in MKD | Number of<br>cases | Average cost per case<br>in MK Denars |
|------|---------------|--------------------|---------------------------------------|
| 2016 | 7.391.640     | 269                | 27.478                                |
| 2017 | 9.365.865     | 353                | 26.532                                |
| 2018 | 9.981.512     | 368                | 27.124                                |

<sup>&</sup>lt;sup>5</sup> Malignant neoplasm of the cervix of the uterus, ie for the following diagnoses according to ICD-10: C53, C53.1, C53.8, C53.9

<sup>&</sup>lt;sup>6</sup> Annex 1: Copy of the response submitted by the HIF.

<sup>&</sup>lt;sup>7</sup> The list of DRG groups is contained in the response submitted by the HIF attached in Annex 1.

<sup>&</sup>lt;sup>8</sup> The HIF has obtained data on the number of cases of hospitalizations, ie the number of hospital treatments, and not the number of treated women / patients, which means that the same person may be hospitalized several times during the year

#### Costs for treatment of the University Clinic (Hospital) for Oncology and Radiotherapy

The University Clinic of Oncology and Radiotherapy treats women with cervical cancer where the cancer is detected at a more advanced stage (Table 5). The data presented in this section were obtained from the UC of Oncology and Radiotherapy following requests for access to public information.

**Table no. 5.** The number of women who were treated at the UC for oncology and radiotherapy according to the type of treatment they received

| Number of women treated at the UC for oncology and radiotherapy |     |     |     |  |
|---|-----|-----|-----|--|
| Type of treatment         2016         2017         2018        |     |     |     |  |
| Radiotherapy  | 116 | 113 | 119 |  |
| Chemotherapy  | 133 | 150 | 165 |  |
| Combination therapy<br>(radiation therapy and<br>chemotherapy)  | 68  | 64  | 73  |  |

Table 6 shows the annual cost of treating women diagnosed with cervical cancer at the UC oncology and radiotherapy, broken down by type of treatment. These amounts are not included in the cost data previously presented by the HIFM, as these types of treatments are not on the list of DRG groups submitted by the fund. From the data, it can be noticed that the average annual cost for treatment of cervical cancer in the UC for oncology and radiotherapy is 10.191.976 denars (as an average of the three years under consideration (2016, 2017, and 2018)).

**Table no. 6.** Summary of the costs of treatment of women diagnosed with cervical cancer in the UC for oncology and radiotherapy, by type of treatment

| The annual cost for treatment of women in MK Denars |           |           |           |  |
|---|-----------|-----------|-----------|--|
| Type of treatment                                   | 2016      | 2017      | 2018      |  |
| Radiotherapy<br>(radiation therapy)                 | 7.394.048 | 7.570.598 | 7.770.610 |  |
| Chemotherapy  | 2.434.748 | 2.971.176 | 2.434.748 |  |
| Total 9.828.796 10.541.774 10.205.358               |           |           |           |  |

The average cost of treating a woman diagnosed with cervical cancer annually is highest in 2017 and lowest in 2018 (Table 7).

 Table no. 7.
 Summary of the average cost of treating a woman diagnosed with cervical cancer at the UC oncology and radiotherapy

| Years | Total number of<br>women treated at<br>the Clinic | The annual cost for<br>treatment of women<br>(in denars) | The average cost for<br>treatment of one woman<br>(in denars) |
|-------|---|--|---|
| 2016  | 317   | 9.828.796  | 31.006  |
| 2017  | 327   | 10.541.774   | 32.238  |
| 2018  | 357   | 10.205.358   | 28.586  |

#### Palliative care costs

PHI Specialized Hospital for Geriatric and Palliative Medicine "November 13" - Skopje, is the only health institution in Macedonia that provides palliative health care for chronic diseases, with special emphasis on malignant diseases. In 2018, a total of four patients were hospitalized for palliative care, while in 2019 it was two patients. The cost of palliative care for patients is partially covered by the HIF<sup>9</sup>, and partly by the patients themselves, i.e. their families. In this section, only the costs paid by the HIFSM are considered, and in the next chapter, the costs paid by the patients and their families will be considered. The costs paid by the HIFNM are shown in Table 8. It can be noted that in 2018 the average cost per patient is higher than in 2019, but this is primarily due to the longer average stay of patients in the institution. Namely, in 2018, the average number of hospital days per patient is 56 days, while in 2019 it is 49 days.

On average, the HIFNM annually pays 121.644 denars for palliative care for women suffering from cervical cancer, taken as an average amount over the two years under review (2018 and 2019).

**Table no. 8.** Summary of the costs in the PHI Specialized Hospital for Geriatric and Palliative Medicine collected by the HIF, according to the number of patients and hospital days

| Year | Number of patients | Total number of<br>hospital days | Total funds<br>collected by the HIF<br>(in denars) | Average cost per<br>patient<br>(in denars) |
|------|--------------------|----------------------------------|--|--|
| 2018 | 4                  | 224                              | 169.788  | 42.447                                     |
| 2019 | 2                  | 98                               | 73.500   | 36.750                                     |

<sup>&</sup>lt;sup>9</sup> The funds paid by the HIF to the PHI Specialized Hospital for Geriatric and Palliative Medicine are not part of the costs shown in Table 1. Because this hospital does not charge costs according to the DRG system.

#### Sick leave expenses

Interviews with women revealed that all women who were employed when they were diagnosed with cervical cancer used sick leave. Of the 16 women interviewed, six (more than a third) were employed at the time they were diagnosed with cervical cancer. Most often, women used sick leave for a period of three calendar months or about 66 working days. The first 30 calendar days of sick leave are paid by the employer in the amount of 85% of the salary for people with malignant diseases. After 30 calendar days, the sick leave is paid by the HIF again in the amount of 85% of the salary for people with malignant diseases. According to the data received by women, most often the HIFS pays sick leave for two months for women suffering from cervical cancer. The average monthly gross salary paid in April 2021 in Macedonia was 42.441 denars. Taking into account these data, it can be concluded that the HIFNM for a woman suffering from cervical cancer on average pays sick leave in the amount of 36.074 denars for one month or 72.150 denars for two months.

According to data from the UC for oncology and radiotherapy, on average for the period from 2016 to 2018, 334 women are treated for cervical cancer annually. In order to make an estimate of how much the HIF pays for sick leave, we will use the data from the research that 40% of women who are ill are employed at the time of diagnosis of the disease<sup>10</sup>. It is estimated that out of 334 women being treated for cervical cancer, 134 women are employed. Taking into account that the average sick leave for a woman is 72.150 denars, it can be assumed that for all women who are treated for this disease, the HIFNM pays total sick leave in the amount of 9.668.100 denars per year.

#### IV.2. Costs of women suffering from cervical cancer

This chapter shows the disease-related costs incurred by women suffering from cervical cancer. These include costs related to diagnostic health services, travel costs for obtaining health services, costs for procurement of drugs, dietary supplements, and similar products, costs for palliative care, and other costs.

#### **Diagnostic health services**

During the period when the disease was first diagnosed, women underwent several diagnostic procedures (Table 9). On average, each woman underwent five diagnostic procedures to determine the diagnosis. Health services for cancer patients are free for patients, i.e. they do not pay co-payments for these services<sup>11</sup>. However, some of the women stated that they were charged a co-payment for certain health services in public health facilities. Also, some of the women underwent certain diagnostic procedures in private health care institutions or abroad, due to the long waiting time for diagnostic procedures in public health care institutions. For these reasons, 10 women said they paid for health services related to the diagnosis of cervical cancer, one woman said she paid nothing, while five women could not remember if they paid for these health services.

<sup>&</sup>lt;sup>10</sup> The assessment is based on ESE research, as there are no official data available on the employment status of women being treated for cervical cancer

<sup>&</sup>lt;sup>11</sup> Program for participation in the use of health care for certain diseases of the citizens and health care for mothers and infants in the Republic of North Macedonia

**Table no. 9.** Summary of diagnostic procedures undergone by women for the diagnosis of cervical cancer

| Diagnostic procedure       | Number of<br>women |
|----------------------------|--------------------|
| Biopsy                     | 15                 |
| Magnetic resonance imaging | 13                 |
| Ultrasound examination     | 11                 |
| PAP - test                 | 10                 |
| Computed tomography        | 9                  |
| Curettage                  | 8                  |
| Colposcopy                 | 4                  |

Women paid an average of 11.043 denars for all diagnostic procedures related to cervical cancer.

In order to estimate the total cost of diagnostic procedures for all women diagnosed with cervical cancer, we will take into account the number of newly diagnosed women with this disease annually, which is 334 women<sup>12</sup>. Taking into account the average cost of 11.043 denars for one woman, it can be assumed that the total cost of all women for diagnostic procedures annually is 3.688.362 denars. It can be given as an annual cost since all of the interviewed women stated that all diagnostic procedures were conducted in a period of less than 12 months.

Women are also exposed to additional costs when visiting health facilities for diagnostic, including travel costs (in details described below), food costs, lost working day costs, and more.

#### Treatment

Regarding the type of treatment that women received for cervical cancer, it can be noted that all women received, or are still receiving radiation therapy and/or chemotherapy, and a smaller number of women had surgery (Table no. 10). This situation indicates that for most of the women interviewed, the cancer was detected at a more advanced stage when surgical treatment was no longer possible. According to the Program of the Ministry of Health (6), no woman who was treated in the public health institutions paid a co-payment for the treatments they received related to cervical cancer. One woman underwent the operation in a private hospital and one woman underwent the operation abroad. These women paid for the treatment, but these costs will not be subject to analysis, as these health services are available in the public health care institutions in Macedonia.

<sup>&</sup>lt;sup>12</sup> Estimated as an average number of women which are annually treated on the UC for oncology and radiotherapy, for the period 2016 to 2018

 Table no. 10.
 Summary of the types of treatment that women have undergone

| Type of treatment            | Number of<br>women |
|------------------------------|--------------------|
| Surgical treatment (surgery) | 3                  |
| Radiotherapy (radiation)     | 16                 |
| Chemotherapy                 | 15                 |

#### **Travel costs**

Women from Skopje can receive radiation therapy and chemotherapy at the UC for Oncology and Radiotherapy Day Hospital. However, women living outside Skopje need to be hospitalized, since they ought to receive treatment for 28 days, which are received every day, except for the days of the weekend. For women who do not live in Skopje (11 women), the average cost of transportation for one trip from home to the clinic and back is 1.418 denars. This means that women spend an average of 2.836 denars for two trips to come to the hospital and leave the hospital. However, almost all the women who were interviewed go home for the weekends, so the real travel expenses during the hospital stay are actually 9.926 denars on average<sup>13</sup> for women living outside Skopje.

For women living in Skopje, or in the vicinity of Skopje, the travel costs for one visit to the Clinic are 112 denars. If we take into account that women should receive therapy for 28 days, the total travel expenses for a woman on average is 3.136 denars.

**Total annual travel expenses.** Bo In the first 12 months after the onset of the disease, women has travel expenses for diagnosis, treatment, and health checks after treatment. Women living in Skopje and the surrounding area realize all trips locally, i.e. in Skopje. On average, women from Skopje have five trips for diagnosis, 28 trips for therapy, and four trips for health check-ups after receiving therapy. The total travel expenses for a woman from Skopje in the first 12 months amount to 4.144 denars. Women living outside Skopje have an average of 3,5 trips for diagnostics in Skopje, 2 trips for a hospital stay in Skopje, and 4 trips for health check-ups in Skopje. For a woman living outside Skopje, these costs are on average 13.471 denars over 12 months. The cost of traveling home for the weekends while in hospital, is not taken into account in this calculation because these trips differ across the women.

At the same time, 8 (eight) women stated that they were accompanied by someone else on each trip to the clinic, while 4 (four) women stated that someone else accompanied them during most of the visits. This implies additional costs for the accompanying person, such as transportation, food, lost working day, and the like.

On average, the travel expenses for a woman, regardless of the place of residence, in the first 12 months of the illness is 8.807 denars. The amount is obtained as an average of travel expenses for women living in Skopje and travel expenses for women living outside Skopje.

<sup>&</sup>lt;sup>13</sup> For 28 working days there are five weekends, for which travel expenses amount to 7.090 denars, added to the basic cost of arrival and departure from the Clinic (2.836 denars)

To estimate the total costs across all women with cervical cancer, the average number of women treated at the UC for oncology and radiotherapy per year will be taken, which is 334 women for the period from 2016 to 2018. The average annual cost for a woman for travel expenses is 8.807 denars, and it is estimated that the total cost for all women per year is 2.941.538 denars.

#### Procurement of medicines, dietary supplements, and similar products

After being diagnosed with cervical cancer, 11 women needed to buy medication, dietary supplements, alternative medicine, and/or a special diet (Table 11). The total costs for procurement of all these products, from the moment of the diagnosis of the disease until the day of the interview, average 7.286 denars per woman. The time spent from the diagnosis of the disease to the interview is on average one year for women who had these costs, which means that the amount of 7.286 denars is an average annual cost.

In order to estimate the total cost for all women suffering from this disease annually, we will take the average number of women who are treated at the UC for oncology and radiotherapy annually, which for the period from 2016 to 2018 is 334 women. The total cost of all women for the purchase of drugs, dietary supplements, and similar products per year on average is 2.433.524 denars.

**Table no. 11.** Types of products that women have purchased that are related to the treatment of cervical cancer

| Products they procured             | Number of<br>women |
|------------------------------------|--------------------|
| Dietary supplements                | 11                 |
| Medication                         | 7                  |
| Special diet products              | 2                  |
| Products from alternative medicine | 1                  |

#### Palliative care

The Health Insurance Fund does not cover the costs related to accommodation and care in palliative care at the Specialized Hospital for Geriatric and Palliative Medicine "November 13", so a significant part of the costs is borne by patients and their families. Palliative care patients paid 111.350 denars in 2018 and 49.000 denars in 2019. The average cost per patient is higher in 2018, compared to 2019, due to the longer stay in the institution (Table 12). In terms of costs, on average patients and their families pay 80.175 denars per year for palliative care (taken as an average of the two years under review - 2018 and 2019).

**Table no. 12.** Summary of the funds paid by the patients and their families for palliative care in the PHI Specialized Hospital for Geriatric and Palliative Medicine "November 13"

| Year | Number of patients | Total number of<br>hospital days | Total funds collected by patients and their families | Average cost<br>per patient |
|------|--------------------|----------------------------------|--|-----------------------------|
| 2018 | 4                  | 224                              | 111.350  | 27.838                      |
| 2019 | 2                  | 98                               | 49.000   | 24.500                      |

#### Sick leave

As mentioned earlier, women who are employed after the diagnosis of cervical cancer most often use sick leave for a period of three months. While on sick leave, women are paid 85% of their net salary. The average net salary for April 2021 is 28.438 denars. This means that on average women while on sick leave are paid 24.173 denars per month, which is 4.265 denars less than their salary. Because most of the women use sick leave for a period of three months, it means that they lose a total of 12.795 denars from their usual salary.

In order to estimate the total loss of funds for all women being treated for cervical cancer, the average number of women treated annually at the UC for oncology and radiotherapy, which is 334 women, will be used. According to the research data, 40% of the women who are treated are employed, thus it can be assumed that 134 women who are treated at the clinic are employed. From these data, it can be assumed that the total loss of funds for women on the basis of sick leave annually is 1714.530 denars.

#### Need for care

Five of the surveyed women stated that for a period after the diagnosis of cervical cancer they could not fulfill the basic life needs on their own, i.e. they needed care from a third party. In all five cases, the care was provided by an unpaid person from the household or outside the household. Two women needed care for 14 days, while one woman needed care for 30 days. The other two women did not provide information on how many days they needed care. This suggests that women who need care from another person, need it for an average of 19 days. Although in all cases the women did not pay the persons for the provided care, the value of the unpaid work for the provision of care can be calculated. Association ESE in previous research<sup>14</sup> calculated that unpaid care work in the household was worth MKD 21.912 for one month. Because there are approximately 22 working days in a month, an average of 19 days in need of care can be considered as paid work

<sup>&</sup>lt;sup>14</sup> For 28 working days there are five weekends, for which travel expenses amount to 7.090 denars, added to the basic cost of arrival and departure from the Clinic (2.836 denars)

for close to one month. Therefore, it can be estimated that the unpaid care provided for a woman with cervical cancer has a value of 21.912 denars.

To estimate the total value of the work for the care of women being treated for cervical cancer, the average number of women treated annually at the UC for oncology and radiotherapy, which is 334 women, will be used. According to the research data, 31% of the women who were treated needed care from another person, thus it can be assumed that 103 women needed care. From these data, it can be assumed that the total value of the provided work for the care of women annually is 2.256.936 denars. It should be noted that in the survey for all women this care was provided by a close family member, i.e. they did not pay for it. However, it can be assumed that there are women in need who paid for the care to be provided by a third party.

#### **Other costs**

Women who were hospitalized said that they were exposed to additional costs, because they had to buy the necessary things to stay in the hospital, and also because of the long stay they often bought food from outside while they were in the hospital. However, women could not provide a specific amount for these costs.

## V. THE IMPACT OF DISEASE ON WOMEN

Diagnosing a malignant disease of the cervix has a serious impact on the life of women. First of all, many of them devote significant time to undergo the necessary examinations, treatments, and health checks for this disease. For some women, receiving chemotherapy and radiation therapy causes a number of side effects that they need to deal with in the long run. Some women lost their jobs due to their frequent absences from work, while some women do not feel able to continue working.

"I am not sure if I will be able to continue working. I work in the textile industry, as a seamstress and now I do not feel able to continue working. I do not have enough years of work to apply for a disability pension, so I do not know what to do next" (statement of a woman suffering from cervical cancer)

"I was fired while I was on sick leave, I do not even know exactly when I was fired. I am still receiving therapy, and then I do not know how I can find a new job. " (Statement of a woman suffering from cervical cancer).

At the same time, some women stated that they were no longer able to perform housework and childcare responsibilities to the same extent as they did before the onset of the disease. At the same time, some women had a pronounced fear for their health and life.

"I have two minor children and now I do not feel able to take care of them. I am still receiving therapy here in the hospital. I am very worried and I do not know how I will continue to take care of my children and the home. All I want is to go home and take care of my children." (Statement from a woman suffering from cervical cancer).

Some women fear for their income and covering basic needs, because the diagnosis of the disease brings additional costs for them and their families, and also prevents them from working and earning for themselves and their families. Particularly affected are women who do not have enough years of work and are not entitled to a disability pension, and due to the diagnosis are unable to work.

"At the time I was diagnosed with cancer, I was not employed. I do not even have enough years of work to be able to claim a disability pension. My husband is retired, but his pension is very low. We do not have money for our basic needs, we do not have enough money for food, not to mention buying some products or something else to improve my health."(Statement of a woman suffering from cervical cancer).

"We have a very low income, we live on my husband's pension which is 9.000 denars. How can we have a normal life with this money? And now with the disease, I have additional expenses, I have to buy medicines, products, and other things. I am in the hospital now, but when the treatment will be over I will return home to Prilep. I will not be able to come to the regular check-ups for my illness in the hospital in Skopje, because I do not have money to pay for the trip. I really do not know how I can control my illness on a regular basis. I am no longer able to work, and I do not even have the right to a pension." (Statement from a woman suffering from cervical cancer). Some women needed a lot of time and more medical examinations before the diagnosis could be made. This situation is an additional burden for women, as it takes away a significant part of their time and also exposes them to additional costs.

"I had big problems because for a whole year the doctors could not determine what was wrong with me, they could not find a diagnosis for me. I went to several doctors, I also went to a private hospital, but no one could find out what was wrong with me, it took them a year to diagnose me. " (Statement of a woman suffering from cervical cancer).

The long waiting time for the diagnostic examinations in the public health institutions, again forced some of the women to do these examinations in private health care, i.e. at their own expense. This situation is certainly a serious financial burden for women and their families. The long waiting time for examinations is a particularly important problem because time is often of great importance for timely treatment and the outcome of malignant diseases.

"I had to wait two months to do a computer (meaning computed tomography) and magnetic resonance imaging. I could not wait that long because the doctors were waiting for these results to decide whether to operate on me or not. So I went to Kosovo to make a computer and a magnet. I am lucky because my extended family helped me financially to pay for these examinations. Otherwise, I myself had no chance to pay for these examinations, because I live on a pension of only 9.000 denars." (Statement of a woman suffering from cervical cancer).



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