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*Milena Klix de Abreu Pereira*

*University of Santa Cruz do Sul*

## ABSTRACT

In Brazil, women represent 51.5% of the population and play multiple roles, including family care and household chores, which directly impacts their health. IBGE data indicates that women are the main users of health services, accounting for 78% of users. Corroborating their role in modern society, there have been changes in the mortality profile of women, which is the focus of this study. The aim of the study was to analyze the main causes of mortality among women of childbearing age in a municipality in the interior of the state of Rio Grande do Sul, making a comparison with a previous study carried out by the authors. The data shows that 197 deaths were recorded, with a higher prevalence in the 40-49 age group. The main causes of death were neoplasms, circulatory diseases, infectious diseases and external causes. This suggests the need for health promotion, early diagnosis and appropriate treatment of diseases to prevent early mortality, highlighting the importance of public health policies.

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## RESUMO

*No Brasil, as mulheres representam 51,5% da população e desempenham múltiplos papéis, incluindo cuidados familiares e tarefas domésticas, o que impacta diretamente sua saúde. Dados do IBGE indicam que as mulheres são as principais usuárias dos serviços de saúde, sendo 78% dos usuários. Corroborando com seu papel na sociedade moderna, observa-se mudanças no perfil de mortalidade das mulheres, sendo esse o foco do presente estudo. O objetivo da pesquisa foi analisar as principais causas de mortalidade das mulheres em idade fértil em um município do interior do estado do*

*Rio Grande do Sul, realizando um comparativo com uma pesquisa prévia realizada pelas autoras. Os dados apontam que foram registrados 197 óbitos, com maior prevalência na faixa etária de 40 a 49 anos. As principais causas de morte foram neoplasias, doenças circulatórias, doenças infecciosas e causas externas. Desse modo, sugere-se a necessidade de promoção da saúde, diagnóstico precoce e tratamento adequado de doenças para prevenir a mortalidade precoce, destacando a importância de políticas públicas de saúde.*

**Keywords:** mortality; woman; women's health; neoplasm.

**Authors:** Nurse at the University of Santa Cruz do Sul (UNISC), specialist in intensive care; Luisa Klix de Abreu Pereira, psychologist at UNISC, resident in child and adolescent health at the Federal University of Paraná; Vera da Costa Somavilla, PhD in Education at the Federal University of Rio Grande do Sul (UFRGS), professor and researcher in undergraduate courses at UNISC.

## I. INTRODUCTION

The trajectory of women in the history of the modern world is marked by struggles in search of greater space and autonomy in society, especially since the 20th century with the advance of the feminist movement. In this way, women have achieved more and more civil, political, social, economic and cultural rights, including becoming the majority of the Brazilian population<sup>1 2 3</sup>. According to the latest census by the Brazilian Institute of Geography and Statistics (IBGE, 2023), women make up 51.5% of the country's population. In this scenario, it can be seen that women play a variety of roles, as well as being involved in family care and household chores. The

accumulation of functions, changes in behavior patterns and women's new lifestyle habits over the years have had a direct impact on their health, contributing to increased exposure to risk situations<sup>1 2 3</sup>. It is worth noting that this population group is the one that uses health services the most, both public and private, accounting for 78% of total users<sup>3</sup>.

Against this backdrop, it can be seen that the pattern of female mortality has changed, especially from the industrialization process to the present day. Currently, women are more exposed to stress and risk factors for chronic diseases, such as a sedentary lifestyle, obesity, smoking and increased alcohol use<sup>1 3</sup>. These factors, together with increased exposure to external risks such as homicides and traffic accidents, have contributed to female mortality. Studies carried out in different global locations highlight a worrying scenario: inequalities based on gender issues, linked to factors such as lower income, lower educational levels and reduced access to employment. These factors limit women's ability to take proper care of their own health<sup>3</sup>.

In this context, outlining the profile of risk factors for female mortality broadens and promotes more effective discussions about women's health. The study of mortality in this specific group is a crucial health indicator, making it possible to analyze the various contexts of the health/disease process. This can support the planning, management and evaluation of public policies, providing a solid basis for more precise and effective interventions<sup>1 3</sup>. In addition, authors point out that mortality is a vital indicator for formulating public health policies, providing a comprehensive view of the specific needs of this population. Thus, analyzing female mortality is a means of better understanding the health conditions and disparities that affect women<sup>4</sup>.

For this analysis, it is important to consider that exposure to sexual and reproductive risks in the country occurs in the 10-49 age group, with women within this range defined as being of childbearing age. This definition differs slightly from the reproductive period considered by the World Health Organization (WHO), which covers

the 15-44 age group. Paying attention to the causes of female mortality during reproductive age makes it possible to identify the greatest risks to which women are exposed during this period of their lives, making it possible to plan health promotion actions, early diagnosis and appropriate treatment of diseases, with the aim of avoiding early mortality. In this sense, when we look at sexually transmitted infections and cancer, in Brazil there are still late diagnoses in various regions, highlighting a weakness in the health system that directly affects women<sup>1 3</sup>.

Taking this as a basis, this article aims to compare the causes of mortality of women of childbearing age (WCA) with a previous study carried out by the authors in 2019, which considered the analysis of WCA deaths from 2013 to 2017. The current proposal was based on an analysis of the same five-year period, considering the years 2018 to 2022, in the same location. The aim was to analyze and discuss the issue based on current theoretical references, in order to promote health promotion measures, disease prevention and early mortality.

The following pages will therefore set out and work on the results, dividing the writing into the following sections: Method, Results, Discussion and Conclusion.

## II. METHODS

To carry out this research, the method chosen was a demographic time-series epidemiological study with an exploratory descriptive approach. This aims to identify the causes of diseases and their risk factors by investigating and distributing the causes of mortality in a specific population, in this case, the FIM. Within a given time frame and location, the observed data is described and it is thus possible to contextualize and identify the main causes of mortality with the aim of fostering strategies for health promotion and prevention of early mortality in the group in question.

The data was collected from the DATASUS TABNET Information System for the period May 2024. This Ministry of Health system provides, among other things, epidemiological data on morbidity and mortality, important health

indicators that serve to support analysis and decision-making in collective health actions. The data was selected by defining the period - from 2018 to 2022 -, the age - from 10 to 49 years -, the female sex and the chapters of the ICD 10 - International Classification of Diseases. Since the focus of the study was to follow up the subsequent years of the previous research with the aim of analyzing whether there was a change in the mortality pattern of FIM in the same municipality, in the interior of Rio Grande do Sul, and to bring new discussion on the subject together with current references from other authors.

The quantitative data was then organized into spreadsheets, in which the relative and absolute frequencies were calculated in order to organize the data to support the analysis and subsequent discussion. Next, the information generated was discussed and problematized based on theoretical references, then compared with the study carried out by the authors in 2019. Based on the four most frequent underlying causes of death, which will be explained in the results.

It should be noted that in the previous study, the data was collected from the Mortality Information System (SIM) of the municipality in question. At the time of the previous production, it was possible to have contact with the death certificates entered in this system, making it possible to obtain more detailed data, such as the neighborhood of residence and work activity of the group surveyed.

### III. RESULTS

From the data collection and analysis, it was observed that in the years 2018 to 2022, 5,812 total deaths were registered in the municipality of Santa Cruz do Sul, of which 2,830 (48.7%) were female deaths. Within this group, 197 (6.9%) were women of childbearing age. Deaths occurred most frequently in the 40 to 49 age group (54.3%), followed by the 30 to 39 age group (28.4%) and less frequently in the 20 to 29 age group (12.7%) and the 10 to 19 age group (4.6%). The average recorded was 39.4 FIM deaths per year, with an

overall FIM mortality rate for the five-year period of 1.47 deaths per 1000 FIM.

Regarding race/color, there was a higher prevalence among white women (80.2%), followed by black women (11.2%), brown women (8.2%) and yellow women (0.5%). No deaths were recorded among indigenous people. In terms of schooling, the majority had between 8 and 11 years of study (54.8%), followed by 12 years or more (17.8%) and 4 to 7 years (15.7%). There were also 6.6% of FIM deaths with no schooling. It should be noted that there was no record of schooling in 5% of the deaths that occurred in the period, which implies an unreliable analysis of the indicator in the years covered by this study. With regard to underlying causes of death, there were four main causes: neoplasms (28%), followed by diseases of the circulatory system (18%), some infectious and parasitic diseases (16.7%) and external causes (13%). It should be noted that in the period analyzed, although not very prevalent, but as an important indicator of maternal health, FIM deaths were recorded due to causes related to pregnancy, childbirth and the puerperium, equivalent to 2% of total deaths. Other varied causes of mortality were also recorded to a lesser extent.

The main neoplasms found were those of the female genital organs (32.7%), which include the uterus, various genital organs, cervix, vulva, vagina and fallopian tubes, followed by breast cancer (23.6%). Together, these typically female neoplasms accounted for more than half of all FIM cancer deaths recorded in the period (56.3%). It's worth noting that other neoplasms, not typically female, were also recorded, but at a lower prevalence. As for diseases of the circulatory system, cerebrovascular diseases (44.4%) and ischemic heart diseases (38.8%) stood out. With regard to the causes of infectious and parasitic diseases, the finding was "other viral diseases not classified elsewhere" (60.6%), followed by HIV (27.7%). With regard to external causes, the highlight in the period surveyed was traffic accidents (69%).



#### IV. DISCUSSION

The municipality surveyed is located in the interior of the state of Rio Grande do Sul, 155 kilometers from the capital Porto Alegre and is in the region called Vale do Rio Pardo, in the central region of the state. According to the IBGE census (2020), the city has 131,365 inhabitants and is a global hub for the tobacco industry, with tobacco as its main source of income; in addition to industries in the food, metallurgical and pharmaceutical sectors. The municipality currently ranks 5th in the state in terms of Gross Domestic Product (GDP).<sup>5</sup>

It should be noted that the four main causes of mortality identified in the group studied have been observed over the years in studies carried out to date. For example, in 1986, the first study on FIM mortality was carried out in the city of São Paulo and the causes found were circulatory system diseases, neoplasms, external causes, infectious and parasitic diseases and maternal causes, in descending order <sup>2</sup>. It is estimated that over the decades there will be a growing increase in deaths from neoplasms, overtaking cardiovascular causes. According to the WHO, this scenario is becoming increasingly frequent on a global level, highlighting cancer as a major health problem <sup>1</sup>.

In this sense, the mortality coefficients are higher in the 40-49 age group, followed by the 30-39 age group. This data is no different from previous research, as well as being a finding in all the studies analyzed in this discussion<sup>1 2 3 6</sup>. It should be emphasized that even though there is a gradual increase in the number of deaths in the older age groups, we are still talking about a relatively young female population, thus configuring an important indicator of something that is a public health problem <sup>3</sup>.

With regard to race, it is important to consider the colonization process of each region. In this study, mortality was more frequent among whites, but it is clear that the municipality in question is Germanic. This data may differ from the race profile of FIM found in other studies carried out in different Brazilian states and cities, where the

highest frequency of morality appears among black and brown people<sup>1 7</sup>.

This data is similar to a study carried out in the state of Sergipe<sup>6</sup>, where the highest mortality coefficient was also found among white women, as well as those with more years of schooling, the same finding as in this study. This information suggests that not only women with less schooling are affected by the causes of early mortality, since populations with less schooling can point to poor social conditions and less access to health information<sup>8</sup>, contributing to the progression of comorbidities and consequently death. However, even women with greater access to education have been affected by these problems.

Focusing on the causes of mortality, neoplasms continue to be the main cause, especially in the 30-49 age group. This has appeared in both developed and developing regions. It should be emphasized that this comorbidity requires early diagnosis and intervention for proper treatment in order to achieve a better prognosis, with a greater chance of cure <sup>3 1</sup>. And although there are significant differences in the pattern of cancer mortality in different regions of Brazil <sup>1</sup>, typically female neoplasms stand out when the focus is on analyzing women's health. Although breast cancer stands out as the main neoplasm of mortality in the country, the advance of cervical cancer has worried health authorities. For example, since 2016, the state of São Paulo has seen a trend reversal in cervical cancer mortality <sup>8</sup>.

Os fatores que têm modificado o quadro epidemiológico dessa doença no Brasil precisam ser analisados e estudados, mas algumas hipóteses podem explicar esse fato. Há uma maior incidência de câncer do colo do útero nas regiões menos desenvolvidas, mas esse padrão está mudando e um aumento da prevalência também tem sido observado nos países desenvolvidos, embora as causas dessa mudança ainda estejam sendo estudadas<sup>8</sup>. The National Cancer Institute (INCA) highlights the magnitude of this disease, revealing that new cases reach 530,000 per year worldwide<sup>9</sup>. The increase in cervical cancer, especially in young women, can be explained by the change in sexual behavior, which is justified

by the increased freedom exercised by women, coupled with low adherence to the use of methods of protection against sexually transmitted infections. Within this context, the main cause of this neoplasm is infection by the human papillomavirus (HPV)<sup>8</sup>.

HPV infection is the most common sexually transmitted infection in the world. Women over the age of 30 who are sexually active end up being the group most exposed to the virus. Subtypes 16 and 18 are responsible for 60% and 15% of cervical cancer cases, respectively, with an increasing trend in mortality rates<sup>10</sup>. It is therefore possible to address the need for primary prevention, which takes place through health education, emphasizing the importance of using condoms during sexual relations and encouraging vaccination. These two simple measures help to reduce the spread of virus<sup>10</sup>.

It is important to emphasize that it is necessary to invest efforts in public health policies to control the disease; in this context, the importance of a strengthened and active primary health network in communities is highlighted. In Brazil, the Unified Health System (SUS) is guided by the principles of universality, integrality and equity and is organized on a territorial basis, taking into account the regionalization and decentralization of the places where it is inserted, since each territory has its own specificities. This gives rise to the health system's levels of care, which are defined as primary (basic), secondary (specialized) and tertiary (highly complex). These categories follow an ascending order to ensure that each individual is cared for at the level they need at the time<sup>11</sup>.

On the other hand, mortality from cervical cancer is considered avoidable since this neoplasm has great potential for cure. Therefore, if it is diagnosed at an early stage<sup>1</sup>, through screening tests, it is possible to change the context of mortality, since the scenario may point to a failure in screening practices and early diagnosis<sup>8</sup>.

It's worth noting that the time between infection and the development of cancer is long, and is more aggressive in young women<sup>10</sup>. This

population is made up of economically active women, who work and take on various responsibilities in the modern world. Consequently, this group has less free time to carry out adequate screening<sup>8</sup>, pointing to a longer time between screenings<sup>10</sup>. This may justify the discovery of the disease at an advanced stage and consequently reduce the chances of cure and increase the chances of mortality. Like cervical cancer, breast cancer is also a neoplasm that has a good potential for cure when diagnosed in good time. There is still a notable increase in the rates of this disease in various regions around the world, making it a public health problem that is not exclusively Brazilian. It is therefore clear that there is a need to expand the coverage of screening and early detection in the health system.<sup>1</sup>

It's worth broadening the discussion beyond typically female neoplasms and turning our attention to cardiovascular diseases. Since diseases in this group are increasingly affecting the female population of reproductive age all over the world, this has been observed in all the sources consulted. When compared to men, the mortality rate ends up being higher, since women have symptoms that are different from the classic symptoms, for example in coronary syndromes, because the physiology of the disease is different, causing inflammatory changes in the coronary endothelium in women, unlike the male population, which has obstructive lesions<sup>1</sup>.

Regarding the third and fourth causes identified respectively, infectious and parasitic diseases, with emphasis on "other virus diseases not elsewhere classified", the complexity of the debate involving this topic can be seen. Given that this classification simultaneously covers a variety of viruses, it is not clear which ones these are, raising doubts as to whether the covid-19 virus would be included in this unspecified group, given that the period analyzed saw a global pandemic causing thousands of deaths, also affecting FIM. Finally, among the external causes of mortality, traffic accidents stand out. In Brazil there has been an increase in mortality due to this factor, with a significant increase in the last decade, placing the country in third place in the ranking of

traffic deaths. Considering the panorama of modern women, this cause is increasingly affecting the female mortality profile<sup>12 13</sup>.

## V. CONCLUSION

Considering the aim of the study was to carry out a comparative analysis with the first study carried out by the authors, the new study shows a change in the mortality pattern of FIM. It is worth noting that the main causes found are not restricted to the municipality in question, since these data corroborate the global research scenario on the subject.

Although the distribution of causes of mortality has changed, both in the previous study and in the others analyzed - cited in the references - with regard to women's health, there is a clear need for health promotion, as well as prevention and early detection of neoplasms, especially those that are typically female. This group of diseases is the most prominent in the epidemiological data available on the subject globally.

Based on the results and discussion, we encourage further studies in the area so that we can better understand the issues surrounding women's health and thus broaden the way in which care for modern women of reproductive age is thought of.

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