Revista O Mundo da Saúde

Sociodemographic, clinical, and family profile of women recently diagnosed with cancer

Danielly Vincensi*
Emelli Fin Hermann*
Sandra Emilia Drews Montagner*
Eniva Milani Fernandes Stumm*
José Antônio Gonzalez da Silva*
Juliana Maria Fachinetto*
Christiane de Fátima Colet*

Abstract

In 2018, there were 227,920 deaths in Brazil due to neoplasms, 19,692 referring to the female population in the northwest of the state of Rio Grande do Sul. It is estimated that by 2020, 115,780 new cases of cancer affected the Brazilian female population, which justifies the main focus of the present study. This study assessed the association between the sociodemographic, clinical, and family characteristics of women recently diagnosed with cancer and their place of residence. This is a cross-sectional and observational study, in which data collection took place from August 2018 to January 2019 through the application of a questionnaire applied to 143 women recently diagnosed with cancer. These subjects were attended in a High Complexity Oncology Center (CACON) of a size IV general hospital (300 or more beds) which were subdivided into three groups: Rural, Urban without Rural Exposure, and Urban with Rural Exposure. It was found that 51% of women were under the age of 60 years old, and comorbidities such as obesity, depression, and breast cancer showed a significant association in relation to the place of residence (p=0.035, p=0.028 p=0.032, respectively). It is concluded that despite the urban environment providing greater infrastructure in the diagnosis, treatment, and measures to prevent the occurrence of cancer, urban, rural and women exposed to the rural environment, demonstrated similar occurrences for the incidence of some types of cancers.

Keywords: Oncology. Women. Rural area. Urban area.

INTRODUCTION

Cancer is a leading cause of death worldwide[1]. The World Health Organization and the International Agency for Research on Cancer anticipated, in their global report, an increase of 60% of cancer cases in the next two decades, with a higher rate of about 81% in low- and middle-income countries, with lower survival rates[2]. In 2018, there were 227,920 deaths in Brazil due to neoplasms, with a higher incidence in the southeast region. The Southern region occupied the third place in the ranking, with 43,141 deaths and, of these, 19,692 refer to the female population[3]. One in six women is diagnosed with cancer, the most common of which are breast and cervical cancers[4].

DOI: 10.15343/0104-7809.202145075088

*Universidade Regional do Noroeste do Estado do Rio Grande do Sul – Unijuí. Ijuí/RS, Brasil
E-mail: danivincensi@hotmail.com

In countries with a low- and middle-income profile, such as Brazil, the Unified Health System (SUS) is the main healthcare program in the treatment of cancer, which is a worldwide example in terms of public healthcare programs, promoting the equal access to the actions and services provided. However, this has some limitations, such as: the difficulty of accessing consultations, the waiting time, and the lack of proper conditions for hospitalization, and these factors can worsen the prognosis and survival of this population[5].

Based on the main focus of the present study, the female population represents 49.5% of the world population; however, they form a greater proportion among those over the age of 60, with a greater association between the occurrence of cancer and aging3. In Brazil, for the year 2020, the National Cancer Institute José Alencar Gomes da Silva estimates that the most common neoplasms in the female population are breast cancer, corresponding to 66,280 new cases; followed by colon and rectal cancer, estimated at 20,470 cases; cervical, which presents 16,590 new cases; and cancer of the trachea, bronchus, and lung totaling 12,440 new expected cases[6].

Differential patterns of cancer incidence and mortality are observed among rural and urban communities worldwide since the degree of urbanization interferes with the prognosis of the disease. In other words, the more urbanized they are the greater their access is to health, to the possibility of adequate diagnosis and treatment; while, rural places have higher numbers and later diagnoses, and sometimes it is more difficult to carry out the treatment due to the distance between their homes and the treatment centers[7]. Dealing with the cancer burden upon women is important not only for its impact on health, but also for addressing gender inequalities and recognizing the role of women, as a social and economic condition, and their importance within the family[3].

However, even though the relationship between the difference of locations with cancer is recognized, studies that investigate their influence on the prevalence of cancer are still scarce, especially those with a female population. Therefore, this study seeks new information to assist health professionals in daily coping with cancer prevention and early detection, assisting them in implementing protocols that help in their management and that contribute to national and international agendas, which include cancer reduction/coping as one of their goals.

Given the above, the objective of this study was to evaluate the association between the sociodemographic, clinical, and family characteristics of women recently diagnosed with cancer and their place of residence.

METHODOLOGY

The present study presents a cross-sectional, quantitative, descriptive, and analytical design. Cross-sectional research consists of evaluating the population in a single moment in time, along with exposure and outcome[8]. The descriptive method allows to define the studied variables, while the analytical design investigates the association/relationship between them[9]. Quantitative research emphasizes reasoning and measurable aspects of human experience and allows to establish a theory based on concepts converted into variables9.

Data collection took place from August 2018 to January 2019, in a Center of High

Complexity in Oncology (CACON), located in a size IV hospital (300 beds or more), assigned to the Northwest region of the State of Rio Grande do Sul. CACON has chemotherapy, radiotherapy, brachytherapy, and clinical research services, which propel this service at national and international level, considered a referral center in the evaluation of the safety and efficacy of new drugs for the treatment of cancer.

The sampling was of the intentional type and 143 women diagnosed with cancer were selected, inserted to start cancer treatment with CACON. These were subdivided into 3 groups: Rural Group (RG) composed of women with only rural residence; Urban Group without Exposure (UG), composed of women who lived exclusively in the urban area throughout their lives; and Urban Group with Rural Exposure (UGRE), composed of women who currently lived in the urban area, but at some point, they lived in rural areas.

The inclusion criteria were: women over 18 diagnosed with cancer, resistant in rural, urban areas or urban areas with rural exposure and who have not yet started cancer treatment. The exclusion criteria were: displaying difficulty or inability to understand questions of the research instrument.

The research participants were approached during the first consultation at CACON, prior to therapy, in a private room. At that time, they received information about the study and, when they agreed to join the studied population, they were presented with the Informed Consent Form (ICF), which, after reading and clarifying doubts, was signed in two copies, one remaining with the researcher and the other with the participant.

Data were collected through the application of a questionnaire, with socio-demographic, clinical, lifestyle habits, comorbidities, and types of cancer variables, completed by the patient herself. The research variables were initially inserted into a database using the Statistical Package for Social Science (SPSS) program, version 23.0 and analyzed with descriptive and analytical statistics. Descriptive analyses were presented as mean and standard deviation, relative and absolute frequency, and associations between groups were performed using the Chi-squared test and Fisher's exact test. For all tests, a value of $p \leq 5\%$ ($p \leq 0.05$) was considered statistically significant[10].

This research was approved by the Ethics and Research Committee of the Cruz Alta University, under opinion no. 2.626.873.

RESULTS

143 women were interviewed, and they were subdivided into 3 groups: Rural Group (RG) with 42 (29.4%) women; Urban Group (UG) with 14 (9.8%) women; Urban Group with Rural Exposure (UGRE) with 87 (60.8%) women. Regarding the total study population, 50.34% are under 60 years of age; 53.84% had a fixed partner; 70.63% completed elementary school. The difference in women's marital status associated with the different residencia groups showed a significant difference (p=0.0068), differently from the variable age (p=0.676) and education (p=0.244) (Table 1).

In Table 2, it can be seen among the total number of participants that: 23.78% had difficulty getting pregnant, with the RG and UG prevailing; 9.1% use oral contraceptive drugs, with a higher frequency among those from UG; 1.4% of women underwent hormone replacement, all of which were from the RG, with a significant difference (p=0.013). In addition, 33.6% reported abortion in the family and 13.3% fetal malformation in

the family, with no significant association between groups.

Table 3 shows that the comorbidities obesity (p=0.035) and depression (p=0.028) associated with different places of residence, showed statistical significance. The other diseases, such as Systemic Arterial Hypertension (SAH), Acute Myocardial Infarction (AMI), Angina, Stroke (AVC), Cardiovascular Disease in the family (CVD), Hypercholesterolemia, Hepatitis, Kidney Disease, Asthma/Bronchitis, Rheumatoid Arthritis, Thrombosis, Anemia in the family, Parkinson's, Alzheimer's, and Smoking, had no significant differences between groups (p>0.05).

Regarding the incidence of different types of cancer, the main one was breast cancer, reported by 30.9% of rural women and 26% of urban women, followed by tracheal cancer, which was more frequent among the RG (2, 4%) and UG (9.2%), and cervical cancer, which was more prevalent among those from UG (5.7%) and those from UGRE (14.3%). The breast cancer index between the groups was significantly significant (p=0.032).

Table 1– Sociodemographic characterization of women with cancer recently diagnosed and assisted in a CACON of a general hospital, stratified from rural to urban. Ijuí, 2019.

	RG n (%) n=42	UG n (%) n=87	UGRE n (%) n=14	p
Age (years)				
≤60	22 (52.4)	45 (51.7)	5 (35.7)	0.676[&]
≥61	20 (47.6)	42 (48.3)	9 (64.3)	
Marital Status				
With partner	30 (71.4)	41 (47.1)	6 (46.2)	0.0068[*&]
Without partner	12 (28.6)	46 (52.9)	7 (53.8)	
Education				
CES[a]	37 (88.1)	54 (54.5)	10 (90.9)	0.244[#]
IES[b]	3 (7.1)	17 (22.7)	0	
CHS[c]	2 (4.8)	4 (5.3)	1(9.1)	

Caption: [a] = Complete Elementary School; [b] = Incomplete Elementary School; [c] = Complete High School; [&] = Chi-squared test; [#] = Fischer test; p≤0.05.
OBS: The number of each variable is related to the number of women who answered the question. RG- Rural Group, UG - Urban Group, UGRE - Urban With Rural Exhibition.

Table 2– Physiological events by participants with cancer recently diagnosed and assisted in a CACON of a general hospital, stratified from rural to urban. Ijuí, 2019.

	RG n (%) n=42	UG n (%) n=87	UGRE n (%) n=14	p
Difficulty in getting pregnant				
Yes	13 (30.9)	21 (24.1)	0	0.233&
No	29 (69.1)	66 (75.9)	14 (100)	
Use of oral contraceptives				
Uses	3 (7.1)	7 (8.2)	3 (23.1)	0.078#
Never used	9 (21.4)	32 (37.6)	6 (46.2)	
Already used	30 (71.4)	46 (54.1)	4 (30.8)	
Menopause				
Yes	11 (26.2)	24 (27.9)	1 (7.1)	0.625&
No	31 (73.8)	61 (70.9)	13 (92.9)	
Hormone Replacement				
Yes	2 (6.5)	0 (0.0)	0	0.013#
Never used	28 (90.3)	61 (92.4)	9 (90)	
I have used before	1 (3.2)	5 (7.6)	1 (10)	
Abortion in the Family				
Yes	14 (33.3)	27 (31.0)	7 (50)	0.572&
No	28 (66.6)	60 (69.0)	7 (50)	
Prematurity in the Family				
Yes	9 (21.4)	11 (11.0)	1 (7.1)	0.484&
No	33 (76.7)	76 (87.4)	13 (92.9)	
Malformation in the Family				
Yes	8 (19.0)	9 (10.3)	2 (14.3)	0.577&
No	34 (81.0)	78 (89.7)	12 (85.7)	
Cancer in the Family				
Yes	27 (64.3)	56 (64.4)	9 (64.3)	0.988&
No	15 (35.7)	31 (35.6)	5 (35.7)	

Caption: & = Chi-squared test; # = Fischer test p≤0.05
OBS: The number of each variable is related to the number of women who answered the question. RG- Rural Group, UG - Urban Group, UGRE - Urban With Rural Exhibition.

Table 3– CComorbidities of women with cancer recently diagnosed and assisted in a CACON of a general hospital, stratified from rural to urban. Ijuí, 2019.

	RG n (%) n=42	UG n (%) n=87	UGRE n (%) n=14	p
SAH [a]				
Yes	24 (57.2)	46 (53.5)	9 (64.3)	0.787[&]
No	18 (42.8)	40 (46.5)	5 (35.7)	
AMI [b]				
Yes	4 (9.5)	3 (3.5)		0.109[#]
No	38 (90.5)	84 (96.5)		
Angina				
Yes	9 (20.9)	12 (13.8)	3 (21.4)	0.534[&]
No	34 (79.1)	75 (86.2)	11 (78.6)	
Stroke [c]				
Yes	3 (7.2)	5 (5.7)	1 (7.1)	0.990[#]
No	39 (92.8)	82 (94.3)	13 (92.9)	
CVD [d]				
Yes	26 (61.9)	43 (49.4)	7 (50)	0.569[&]
No	16 (38.1)	43 (49.4)	7 (50)	
Hypercholesterolemia				
Yes	15 (34.9)	26 (29.9)	5 (37.5)	0.760[&]
No	28 (65.1)	61 (70.1)	9 (64.3)	
DM [e]				
Yes	5 (11.9)	16 (18.4)	1 (7.1)	0.611[&]
No	37 (88.1)	71 (81.6)	13 (92.9)	
Hepatitis				
Yes	4 (9.5)	6 (6.0)	0	0.532[#]
No	38 (90.5)	81 (93.1)	14 (100)	
Kidney disease				
Yes	4 (9.3)	4 (4.6)	3 (21.4)	0.154[#]
No	39 (90.7)	83 (95.4)	11 (78.6)	
Asthma / Bronchitis				
Yes	6 (14.0)	10 (11.5)	2 (14.3)	0.029[&]
No	37 (86.0)	77 (88.5)	12 (85.7)	
Rheumatoid arthritis				
Yes	14 (32.6)	26 (30.2)	4 (28.6)	0.973[&]
No	29 (67.4)	60 (69.8)	10 (71.4)	
Obesity				
Yes	2 (4.7)	13 (14.9)	5 (35.7)	0.035[*#]
No	41 (95.3)	74 (85.1)	9 (64.3)	
Thrombosis				
Yes	1 (2.3)	1 (1.0)	0	0.707[#]
No	42 (97.7)	86 (98.9)	14 (100)	

to be continued...

continuation table 3...

	RG n (%) n=42	UG n (%) n=87	UGRE n (%) n=14	p
Yes	0 (0.0)	1 (1.0)	0	0.885#
No	43 (100.0)	86 (98.9)	14 (100)	
Parkinson's				
Yes	0 (0.0)	1 (1.0)	0	0.885#
No	43 (100.0)	86 (98.9)	14 (100)	
Alzheimer's				
Yes	1 (2.3)	1 (1.1)		0.536#
No	42 (97.7)	86 (98.9)		
Depression				
Yes	17 (39.5)	30 (34.5)	5 (35.7)	0.028&
No	26 (60.5)	57 (65.5)	9 (64.3)	
Smoking				
Yes	8 (18.6)	13 (14.9)	2 (14.3)	0.111*
No	33 (76.7)	53 (60.9)	11 (78.6)	
Already smoked	2 (4.7)	21 (24.1)	1 (7.1)	

Caption: [a] = Systemic Arterial Hypertension; [b] = Acute Myocardial Infarction; [c] = Stroke; [d] = Cardiovascular disease; [e] = Diabetes Mellitus; [&] = chi-squared test; [#] = Fischer test p≤0.05.
OBS: The number of each variable is related to the number of women who answered the question. RG- Rural Group, UG - Urban Group, UGRE - Urban With Rural Exhibition.

Table 4– Types of Cancer of women recently diagnosed and assisted in a CACON of a general hospital, stratified from rural to urban. Ijuí, 2019.

	GR n (%) n=42	UG n (%) n=87	UGRE n (%) n=14	Total (%) n=143	p
Uterus					
Yes	1 (2.4)	4 (4.6)	0	5 (3.5)	0.722#
No	41 (97.3)	83 (95.4)	14 (100)	138 (96.5)	
Breast					
Yes	13 (30.9)	26 (26.0)	0	39 (27.3)	0.032&
No	29 (69.0)	61 (70.1)	14 (100)	104 (74.7)	
Cervix					
Yes	0 (0.0)	5 (5.7)	2 (14,3)	7 (4.9)	0.176#
No	42 (100.0)	82 (94.3)	12 (85,7)	138 (96.5)	
Vulva					
Yes	0 (0.0)	2 (2.3)	0	2 (1.4)	0.728#
No	42 (100.0)	85 (97.7)	14 (100)	141 (98.6)	
Colon-Rectum					
Yes	1 (2.4)	2 (2.3)	2 (14,3)	5 (3.5)	0.127#

to be continued...

continuation table 4...

	RG n (%) n=42	UG n (%) n=87	UGRE n (%) n=14	Total (%) n=143	p
No	41 (97.3)	85 (97.7)	12 (85,7)	138 (96.5)	
Trachea					
Yes	1 (2.4)	8 (9.2)	0	9 (6.3)	0.253#
No	41 (97.6)	79 (90.8)	14 (100)	134 (93.7)	
Non-Melanoma					
Yes	1 (2.4)	1 (1.1)	0	2 (1.4)	0.263#
No	41 (97.3)	86 (98.9)	14 (100)	141 (98.6)	

Legend: & = Chi-squared test; # = Fischer test p <0.05
OBS: The number of each variable is related to the number of women who answered the question. RG- Rural Group, UG - Urban Group, UGRE - Urban With Rural Exhibition.

DISCUSSION

Among the types of cancer referred to in the present study, it was found that half of them occurred in women, under the age of 60 years. The literature points to an association between population aging and an increase in the number of cancer cases[11]. These authors mention the lack of healthy habits, smoking, poor diet, physical inactivity, sexually transmitted infections, and late diagnosis and early treatment, as the main factors to justify this increase; and some of these will be discussed in this article. On the other hand, De Freitas *et al.*[5] explains that health care is more evident in the female population with older ages, which are more concerned with their well-being and health, and these individuals occupy about 60% of the diagnosis centers or medical specialties.

Most of the study participants live in the urban area. Batista *et al.*[12] found a high frequency of women who came to the institution diagnosed with cancer in advanced stages; thus, not living close to a health service center was associated with the late diagnosis already in an advanced stage. This variable was not evaluated in the present study. The predominance of patients in the urban perimeter can be justified by data from the IBGE, which in 2010 reported a greater number of women with cancer in the municipality of Ijuí (91%)[13].

Regarding marital status, it was found that rural residents are mostly married or live with a fixed partner, this association is significant. Silva *et al.*[14] mention that marriage is a factor of residing in rural areas and that those who seek an education, work, and personal fulfillment migrate from rural to urban areas. The male presence, as supporters of cancer patients, reflects on the prognosis of the disease, making the experience with cancer less traumatic for women[15].

The results of the present study reveal that the education of women residing in urban areas is higher than that of residents exclusively in rural areas; however, without significant association. Cardoso *et al.*[16] show in their study that women residing in the urban area have between five and eleven years of study, while those in the rural area have up to eight years of study.

A percentage of women in this study reported difficulties in becoming pregnant. There are numerous factors that trigger this problem, such as: anovulation, age, blockages of the uterine tubes, interruption of nesting, hormonal problems, among others[17]. One of the factors pointed out by Garcia *et al.*[18] is the intensive use of pesticides with infertility,

and the use of these agents can generate intoxication, and consequently, cause acute and chronic damage, such as impotence, abortion, malformations, neurotoxicity, hormonal dysregulation, effects on the immune system, and cancer.

In 2013, according to the IBGE, for every thousand women interviewed, throughout Brazil, aged between 18 and 45 years, they had not been successful in initiating a pregnancy, of which 83.9% were urban residents19. This data is similar to that of the present study in terms of the frequency of occurrence, but it differs as to the place of residence, since in the present study there was a predominance of women living in rural areas, or already exposed to it.

In the present study, part of the sample that resides in the urban environment, at some point had exposure to the rural environment. For Dutra *et al.*[20], the urban-rural borders are increasingly closer, which can lead to the exposure of peri-urban residents to the contamination of pesticides. It is known that there are some variables that would need to be analyzed, such as time of exposure, type of exposure, and care given when exposed while considering that the intensity of exposure can influence this impact. In this study such data were not investigated.

During the data collection, few interviewees used oral contraceptives or hormone replacement therapy. Oral contraceptives and Hormone Replacement Therapy (HRT) have hormones in their composition. The study by Tian *et al.*[21] sought to show the effects of estrogen and progesterone administration on cell proliferation and underlying mechanisms in breast cancer cells (MCF-7). The administration of estrogen or progesterone alone was sufficient to promote the proliferation of MCF-7 cells, but the combined therapy had a greater harmful effect when compared to the use of isolated hormones.

Hormone replacement therapy is related to breast cancer, showing an increased risk, after the fifth year of drug therapy use, with greater potential if it is associated with estrogen and progesterone[22]. Souza *et al.*[23], reported the contraindication of hormonal therapy for women with a family history of breast cancer, in which case alternative therapies are recommended to alleviate the climacteric effects.

The use of oral contraceptives occurs, most of the time, in a period far from the appearance of breast cancer, and evidence shows that women who used it for less than four years did not present a significant association with the development of breast cancer[24]. Regarding the use of contraceptives during cancer treatment, the physician must evaluate the case of each patient in individual terms. For some, the suspension of this hormonal therapy is the safest option, one of the reasons being the increased risk of thrombosis and vascular complications, and opting for the Intrauterine Device (IUD) or the use of condoms. However, in the case of the use of these agents, the patient must be accompanied by a qualified professional, so that they prescribe the most adequate contraceptive, which would not interact with the prescribed treatment and prevent possible risks[25].

A percentage of women in the present study reported abortions and fetal malformations in the family, with no significant association between places of residence. De Stefani *et al.*[26] cite risk factors involved with such problems, pointing out that advanced maternal age may be a risk factor for the onset of aneuploidies, since it increases the chances of errors in the meiotic division to produce female gametes with aging. Also, race, pre-existing diseases, socioeconomic, and environmental conditions of pregnant women may predispose them to the incidence of fetal malformations[27]. In the present study, such characteristics of these women were not evaluated.

Still, regarding fetal malformation, the use of alcohol can be mentioned as an associated factor, which in pregnancy causes fetal growth restriction and smaller head circumference28. In addition to this, smoking, since nicotine is highly toxic, can also cause miscarriage, low weight, and premature births[29].

Likewise, exposure to pesticides during

pregnancy and its relationship with the risks of fetal malformations serve as a risk factor for fetus prematurity as evidenced by an epidemiological study that points out that chronic exposure is associated[30]. It is also observed that, in microregions that have higher per capita use of pesticides there is a higher Apgar score with an evaluation considered unsatisfactory (<8), indicative of precariousness in the newborn's vital functions, as well as births before the end of the 22nd week, which usually results in neonatal death18. Thus, such data suggest the existence of a relationship of gestational risks to the fetuses of mothers exposed to pesticides.

Morbidities such as systemic arterial hypertension (SAH), cardiovascular diseases family history and obesity were frequent among the interviewees. Cardiovascular diseases have a high incidence and are independent of sex, but in women, it increases significantly during the climacteric period, and constitutes a public health problem[31]. This has been pointed out by De Aguiar *et al.*[32] concerning patients who, at the diagnosis of cancer, already have some type of previous comorbidity, among them, the most incident are cardiovascular diseases.

Obesity was verified more frequently among those who live in urban areas and with rural exposure. Martins-Silva *et al.*[33] point out that rural and urban areas differ from each other, in low- and middle-income countries, commenting in their work that there are higher rates of obesity reported among urban residents. However, the same authors report comparable values between the two situations in high-income countries, as urbanization and greater access to mechanization have been suggested as important factors for increasing the prevalence of obesity in rural areas. Obesity, when associated with a sedentary lifestyle, shows a direct relationship with the development of some neoplasms; the higher the value of the Body Mass Index (BMI), the greater the severity and the chances of metastasis or the development of the tumor itself, in addition to being related to increased mortality[32].

Depression is the most common psychiatric disorder in cancer patients, with prevalence rates ranging from 22% to 29%34. These results are in line with the present study, in which depression affected an important portion of the sample. In Brazil, population-based studies in urban areas, developed by Soares *et al.*[35] showed a prevalence of common mental disorders in women living in rural areas, from 22.1% to 34.2%. Despite the relative scarcity of national studies, the prevalence of mental disorders in females ranged from 23.3% to 66.9%. The most affected women were those with less education, who suffered an abortion, and who declared themselves to be smokers, since education has a direct relationship with mental health, influencing choices in life and the acquisition of new knowledge, which can contribute to attitudes and healthier behaviors. Moreover, as already discussed, such a disease may be associated with exposure to pesticides.

Biological factors, such as the deregulation of the hormonal axis associated with stress, and increased inflammatory response are common in patients with depressive disorders and have been considered as possible pathological mechanisms responsible for a worse prognosis for cancer patients36. Depressed patients may have little adherence to cancer treatment regimens or may develop harmful health behaviors, such as smoking[34].

An important part of the female population studied, reported the use of tobacco. Since the beginning of the 1950s, the relationship between cigarette consumption and lung cancer has been established, and epidemiological studies have continuously identified 20 new cancer sites with causal links to tobacco use37.

Globally, 175 million women aged 15 and over are current smokers38. In 2013, the National Health Survey (NHS) was carried out by IBGE in partnership with the Ministry of Health and Fiocruz, updating data on the prevalence of Brazilian adult smokers, in which women living in the urban area, represented 11% of the smoking population, which is similar to women living in rural areas, who represent 10.7%; percentages that are similar

to the findings in this study[39].

According to the National Cancer Institute José Alencar Gomes da Silva (INCA)[39], smoking and passive exposure to tobacco are important risk factors for the development of lung cancer and in about 85% of diagnosed cases, lung cancer is associated with the consumption of tobacco products. The risks of occurrence of the disease and the mortality caused by it are increased by the greater the intensity of exposure to smoking.

According to INCA[39], in 2020, 66,280 new cases of breast cancer will be diagnosed, 29.7% of all neoplasms estimated for the period. Second, it is estimated that it is colon and rectal cancer (9.2%), followed by cervical cancer (7.5%), and tracheal cancer (5.6%)6, which collaborates with results of this study, in which the most frequent types of cancer were: breast, cervix, and trachea.

Breast cancer is the most prevalent in the world in the female population and most common in women aged 45 to 65 years24. Main risk factors for breast cancer are age, genetics, and endocrine factors, and it is recommended that only 5 to 10% of the total cases correspond to hereditary character[40].

Regarding the difference in care among oncological women and their place of residence, Ribeiro et al.6 affirm that, despite the fact that more urbanized states and capitals facilitating access to the health system, in their study, there was an increase in breast cancer mortality in both the more urbanized and less urbanized states. In relation to this study, the increase in the cancer mortality rate in more urbanized perimeters can be explained by the research by Hall *et al.*[41], in North Carolina, who concluded that the predominant incidence in urban municipalities seems to be explained by the urban prevalence of registered hospitals and, consequently, the municipalities with these hospitals may have a higher incidence because of the increased detection of breast cancer.

The INCA explains that cervical cancer has possible risk factors such as the beginning of premature sexual activity, multiple partners, smoking, and prolonged use of birth control pills[42]. Regarding neoplasms, Mascarello *et al.*[43] say that it has the highest potential for prevention and cure, in addition to a good prognosis, when diagnosed early; however, late diagnosis may be the main factor responsible for maintaining high mortality rates. Fernandes *et al.*[44] state that the incidence of cervical cancer can be reduced by around 80% when cytological screening is implemented with quality. However, scenarios with a regular offer of tracking, demonstrate that there was no significant decrease in its incidence. Mascarello *et al.*[43] concluded, as observed in the study, that the incidence of cancer was higher in women with lower educational levels and lower social classes.

As for lung cancer and trachea, its incidence increased in females. Mendonça *et al.*[45] explain that this type of cancer has stabilized or decreased in the male population, while in women it has increased significantly in recent years. It is estimated that, by 2020, cancer of the trachea, bronchus and lung will be diagnosed in 12,440 women6.

The process of lung carcinogenesis in women can be influenced by several factors, such as hormonal and physiological disorders[43]. However, not all people with these changes develop lung cancer, some without any known risk factor do, which indicates the importance of genetic and environmental influences46.

Cancer compromises the quality of life of women in the physical, psychological, and social domains, especially those aged 50 years old or more, not only because they have to deal with the traumatic loss of femininity, but also with the fear of rejection of their partners and the pressure of the commitments associated with being a mother and housewife. For this reason, the support of professionals, and especially the family, is important in order to reduce the suffering of women recently diagnosed with cancer[47].

CONCLUSION

This study showed the association between sociodemographic, clinical, and family characteristics of women recently diagnosed with cancer related to their place of residence. Herein, we demonstrated that despite the urban environment providing greater infrastructure in the diagnosis, treatment, and measures to prevent the occurrence of cancer, these urban, rural women and those exposed to the rural environment, demonstrated similar occurrences for the incidence of some types of cancers. Therefore, it is concluded that marital status, the use of hormone replacement, and comorbidities such as obesity, depression, and breast cancer are associated with different places of residence.

However, this study has some limitations: 1) the discrepant number among the participants in each group that were not controlled by the study; 2) the lack of information on women's cancer diagnoses; 3) the lack of information on the time of exposure to rural areas and pesticides.

The findings of this research contribute to the data already existent in the literature and to the health professionals, in order to prevent diseases and reduce increasing cancer rates in this population. Further research is recommended to assess the characteristics of women with cancer, to help prevent and manage the disease.

REFERENCES

1. Torre LA, Islami F, Siegel RL et al. Global Cancer in Women: Burden and Trends. Cancer Epidemiol Biomarkers Prev. 2017;26(4):444-457.
2. Instituto Nacional de Câncer José Alencar Gomes da Silva. Notícias: OMS e IARC lançam relatórios globais sobre o câncer [publicação na web]; 2020 [acesso em 20 de fevereiro de 2020]. Disponível em: http://www.inca.gov.br/noticias/oms-e-iarc-lancam-relatorios-globais-sobre-o-cancer
3. Brasil. Departamento de Informática do Sistema Único de Saúde do Brasil - DATASUS. Indicadores de morbidade e fatores de risco – TABNET [publicação na web]; 2018 [acesso em 20 de fevereiro de 2020]. Disponível em: http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sim/cnv/obt10uf.def
4. Wambalaba FW, Son B, Wambalaba AE et al. Prevalence and Capacity of Cancer Diagnostics and Treatment: A Demand and Supply Survey of Health-Care Facilities in Kenya. Cancer Control. 2019;26(1):1073274819886930.
5. Freitas MLF, Nunes MS, Rodrigues PKB et al. História familiar de câncer, perfil sociodemográfico e estilo de vida da população assistida em um programa de prevenção ao câncer. Unimontes. 2019:93-100.
6. Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2020: incidência de câncer no Brasil [publicação na web]; 2020 [acesso em 20 de fevereiro de 2020]. Disponível em: http://www.inca.gov.br/numeros-de-cancer
7. Ribeiro MS, Abreu NC, Borges TFF et al. Urbanidade e mortalidade por cânceres selecionados em capitais brasileiras, 1980–2009. Cad Saúde Colet. 2013;21(1):23-33.
8. Thiese MS. Observational and interventional study design types; an overview. Biochemia Med. 2014;24(2):199-210.
9. Lacerda MR, Costenaro RGS. Metodologias da pesquisa para a enfermagem e saúde: da teoria à prática. 1ªed. Porto Alegre: Moriá; 2015.
10. Bisquerra, R, Sarriera JC, Martínez F. Introdução à estatística: enfoque informático com o pacote estatístico SPSS. Porto Alegre: Artmed; 2004.
11. Miranda B, Vidal SA, Mello MJG et al. Cancer patients, emergencies service and provision of palliative care. Rev Assoc Med Bras. 2016;62(3):207-211.
12. Batista MG, Da Silva Ramos K, Costa CBA. Perfil sociodemográfico e clínico de mulheres com câncer do colo do útero associado ao estadiamento avançado. RCSNE. 2017;15(2):77-87.
13. Brasil. Instituto Brasileiro de Geografia e Estatística - IBGE. SIDRA Tabela 1378 - população residente, por situação do domicílio, sexo e idade, segundo a condição no domicílio e compartilhamento da responsabilidade pelo domicílio [publicação na web]; 2010

[acesso em 25 de fevereiro de 2020]. Disponível em: http://sidra.ibge.gov.br/Tabela/1378#resultado
14. Silva CBC, Schneider SG. Trabalho rural e pluriatividade. Gênero e geração em contextos rurais. Ed. Mulheres. 2010:183-208.
15. Ferreira DB, Frago PM, Reis ED et al. Nossa vida após o câncer de mama: percepções e repercussões sob o olhar do casal. Rev Bras de Enf. 2011;64(3):536-544.
16. Cardoso LSM, Mendes LL, Velásquez-Meléndez G. Diferenças na atenção pré-natal nas áreas urbanas e rurais do Brasil: Estudo transversal de base populacional. REBEn. 2013;17(1):86-101.
17. Lima APW, Lourenço JW. Infertilidade humana: comentando suas causas e consequências. Rev Saúde e Desenvolvimento. 2016;10(5):110-124.
18. Garcia SD, De Lara TIC. O impacto do uso dos agrotóxicos na saúde pública: revisão de literatura. Saúde e Desenvolvimento Humano. 2020;8(1):85-96.
19. Brasil. Instituto Brasileiro de Geografia e Estatística - IBGE. Mulheres de 18 a 49 anos de idade que tiveram relações sexuais nos últimos 12 meses, ainda menstruam e participaram de grupo de planejamento familiar para 2013 [publicação na web]; 2013 [acesso em 25 de fevereiro de 2020]. Disponível em: http://sidra.ibge.gov.br/tabela/5531#resultado
20. Dutra LS, Ferreira AP. Associação entre malformações congênitas e a utilização de agrotóxicos em monoculturas no Paraná, Brasil. Rev Saúde em Debate. 2017;41:241-253.
21. Tian JM. Estrogen and progesterone promote cell proliferation of breast cancer, inducing the expression of G1 cyclin. Braz J Med Biol Rev. 2018;51(3).
22. Schunemann JE, Souza RT, Dória MT. Hormonal contraception and breast cancer. Femina. 2011;39(4):232-235.
23. Souza NRR, Viana MEL, Miranda MLC, Guimarães BCS, Miranda ML, Souza JHK. Relationship between hormone replacement therapy in menopause and the development of neoplasms. Braz J Surg Clin. 2019;25(2):135-143.
24. Sabino ECC. O uso de anticoncepcionais orais combinados e sua relação com o câncer de mama [publicação na web]; 2017 [acesso em 25 de fevereiro de 2020]. Disponível em: http://repositorio.uniceub.br/jspui/handle/235/11718
25. Silva S, Boer R, Cruz LAP et al. Fertility and contraception in women with cancer undergoing chemotherapy. Esc Anna Nery. 2020;25(1).
26. Stefani RR, Bockmann BS, Baldissera GS et al. Congenital malformations: main known etiologies, population impact and need for monitoring. Acta méd. 2018:155-184.
27. Oliveira LMMH, Araujo HMMH, Arimateia GDT et al. Malformações e Abortos Espontâneos no Brasil. Unicatólica. 2020;4(2).
28. Freire TM, Machado JC, Melo EV et al. Efeitos do consumo de bebida alcoólica sobre o feto. Rev Bras de Ginecol Obstet. 2005;27(7):376-381.
29. Rodrigues AL, De Souza DR, De Lima Borges J. Consequências do uso de álcool e cigarro sobre o binômio mãe-feto. DêCiência em Foco. 2018;2(1):53-62.
30. Cremonese C, Freire C, Meyer A et al. Exposição a agrotóxicos e eventos adversos na gravidez no Sul do Brasil, 1996-2000. Cadernos de Saúde Pública. 2012;28(7):1263-1272.
31. Takamune DM, Maruichi MD, Yu Wei Pai C et al. Conhecimento dos fatores de risco para doença cardiovascular em mulheres no climatério: estudo piloto/Knowledge of risk factors for cardiovascular disease in the climacteric period: pilot study. Arq Med Hosp Fac Cienc Med Santa Casa São Paulo. 2018;56(3):117-121.
32. Aguiar SS, Rodrigues GM, Santos LN et al. Qualidade de Vida Relacionada à Saúde e Risco de Comorbidade Cardiovascular ao Diagnóstico de Câncer de Mama. Rev Bras de Cancerol. 2019;65(3).
33. Martins-Silva T, Vaz JS, Mola CL et al. Prevalências de obesidade em zonas rurais e urbanas no Brasil: Pesquisa Nacional de Saúde, 2013. Rev Bras Epidemiol. 2019;22:e190049.
34. Bottino SMB, Fragas R, Gattaz WF. Depression and cancer. Archives of Clinical Psychiatry. 2009;36:109-115.
35. Soares PSM, Meucci RD. Epidemiologia dos Transtornos Mentais Comuns entre mulheres na zona rural de Rio Grande, RS. Cien Saude Colet, 2020;25:3087-3095.
36. Archer J, Hutchison I, Korszun A. Mood and malignancy: head and neck cancer and depression. J Oral Pathol Med. 2008;37:255-270.
37. Lauby-Secretan B, Straif K, Baan R et al. A review of human carcinogens–Part E: tobacco, areca nut, alcohol, coal smoke, and salted fish. Lancet Oncol. 2009;10(11):1033.
38. Drope J, Schluger N, Cahn Z et al. The Tobacco Atlas. Atlanta: American Cancer Society and Vital Strategies. 6ªed, Atlanta, GA: ACS; 2018.
39. Instituto Nacional de Câncer José Alencar Gomes da Silva. Observatório da Política Nacional de Controle do Tabaco: Dados e números da prevalência do tabagismo [publicação na web]; 2020 [acesso em 25 de fevereiro de 2020]. Disponível em: http://www.inca.gov.br/observatorio-da-politica-nacional-de-controle-do-tabaco/dados-e-numeros-prevalencia-tabagismo
40. Hankinson S, Tamimi R, Hunter D. Textbook of Cancer Epidemiology. 3ª ed. EUA: Oxford Univ Press. 2018.
41. Hall SA, Kaufman JS, Millikan RC et al. Urbanization and breast cancer incidence in North Carolina, 1995–1999. Ann Epidemiol. 2005;15(10):796-803.
42. Instituto Nacional de Câncer José Alencar Gomes da Silva. Tipos de Câncer: Câncer colo de útero tabagismo [publicação na web]; 2020 [acesso em 27 de fevereiro de 2020]. Disponível em: http://www.inca.gov.br/tipos-de-cancer/cancer-do-colo-do-utero
43. Mascarello KC, Silva NF, Piske MT et al. Perfil sociodemográfico e clínico de mulheres com câncer do colo do útero associado ao estadiamento inicial. Rev Bras de Cancerol. 2012;58(3):417-426.

44. Fernandes NFS, Galvão JR, Assis MMA et al. Acesso ao exame citológico do colo do útero em região de saúde: mulheres invisíveis e corpos vulneráveis. Cad de Saúde Pública. 2019;35:e00234618.
45. Mendonça MCB, Marques MCA, Santos MF et al. Aumento da incidência de câncer de pulmão em mulheres. Cad Med-UNIFESO. 2020;2(3).
46. De Groot P, Munden, RF. Epidemiology of lung cancer, risk factors and prevention. Radiol Clin N. 2012;50(5):863-876.
47. Rahou BH, Rhazi KE, Ouasmani F et al. Quality of life in Arab women with breast cancer: a review of the literature. Health Qual Life Out. 2016;14:64.

Received in august 2020.
Accepted in february 2021.