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Occupational profile, and alcohol and tobacco consumption in patients with head, neck, and lung cancer in the city Uberlândia, MG

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Abstract

Cancer is the second leading cause of death in Brazil, and head, neck, and lung cancer are among the five most common types in the male Brazilian population. It is reported that tobacco, alcohol and occupational agents are important risk factors for the disease. This study aims to describe the work profile and the use of alcohol and tobacco among patients diagnosed with these types of cancers. It is a quantitative, descriptive, exploratory, transversal study. The sample consisted of 118 patients seen and registered at a public hospital, who answered a questionnaire that contained sociodemographic and professional information, in addition to the Fagerstrom Test and the AUDIT. Most participants were men, white, married, with an average age of 60, an incomplete primary education, income below one minimum wage, with the main occupational activities related to rural work, civil construction, and cleaning and maintenance. The history of alcohol and tobacco abuse, which also occurred after the diagnosis of cancer, was raised, as well as living with family members and co-workers who also used these substances. It is concluded that there is a need for assistance aimed at changing lifestyles during cancer treatment, expanding the vision of studies related to cancer for specific sociodemographic groups, concerning lifestyle and consumption habits, work profile, as well as work environment.

Key words: Occupational Cancer, Smoking, Alcoholism.

INTRODUCTION

According to the World Health Organization, in 2018, cancer is the second leading cause of death worldwide, with an estimated occurrence of 18 million new cases, and 9.6 million deaths per year[1]. In Brazil, it is estimated that for each year in the 2020-2022 period, 625 thousand new cases of the disease will occur. Only for the year 2020, specifically, with regard to lung, bronchial and tracheal cancer, the occurrence of 30,200 new cases is estimated; for cases of cancer in the oral cavity, the number is 15,190 cases; in the larynx, the calculated number is 7,650 new cases[1].

Regarding the etiology, some factors cause the incidence of cancer to increase, such as aging and population growth, the change in distribution and the prevalence of risk factors, especially those associated with socioeconomic development, such as consumption (food, medicine, tobacco, alcohol, and household products), the cultural

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environment (habits, customs, and lifestyle), and the occupational environment[1-2].

Cancer is a multifactorial disease in which there is a synergy of genetic and environmental effects. From the environmental point of view[2], there is the work environment where an individual is inserted, where occupational cancer is formed. This may be considered a form of delayed toxicity in its clinical course, and in its outcome, due to exposure to chemical, physical or biological agents classified as carcinogens, present in the work environment and responsible for at least 10% of cancer illnesses. On the other hand, there are the lifestyle and habits, whose studies have demonstrated for some time, that the consumption of tobacco (increases the chance for the development of lung cancer by 25%, for example), and alcoholic beverages, (whose harmful consumption are responsible for 4 to 25% of the global cancer burden), and are shown as important components for the carcinogenic development of the most varied types[1-3].

Particularly[2], in cases of lung cancer (included here, trachea and bronchi), and oral cavity, esophagus and larynx (known as head and neck cancer), active or passive smoking and excessive alcohol consumption are configured as main modifiable risk factors for the development of the disease. Smoking is the main contributor to the incidence of cancer and deaths expected for 2020 in Brazil. The fraction attributable to infections appears as the second preventable cause of cancer, as observed in low and middle income countries[4]. In addition, factors related to occupational exposure, such as contact with physical or chemical agents (such as asbestos, silica, uranium, chromium, radon, wood and chemicals used in metallurgy, oil, plastics, textile industries), also appear in the list of these risk factors[1]. Some studies that analyzed the impact of occupational agents on the overall cancer number in the Brazilian population, are still incipient, when compared to those of other countries, possibly related to the underreporting of cases related to informal jobs[4].

Cancer is a worldwide and growing problem; but it is not uniform. One third of cancer cases are considered to be due to preventable causes, however, there is a worldwide trend towards an increase in the number of new cancer cases in low-income or developing countries; often related to the transition of risk factors, such as the adoption of new life habits and new ways of working by these populations, which are still linked to types of cancer associated with infections. Evidence shows that the mortality risk rate in people with a lower socioeconomic level is 1.71 (95%CI: 1.44, 2.03), with the modifiable risk factors responsible for 45% of cases[5-6].

Low-income countries show a high prevalence of non-cardia gastric and cervical cancers, and can be prevented through tobacco control, infections, and healthy eating. On the other hand, breast, prostate, and colorectal cancers, common in high-income countries, require actions to change the sedentary lifestyle. Brazil lacks policies aimed at legislation and economic measures to promote the changes strongly impacted in the face of modifiable risk factors. Priority should be given to research projects to explore cancer risks among low-income population groups, who are at increased risk, and who live under conditions that make them extremely vulnerable[4].

Therefore, the need for actions and research that consider the multidimensional relationship in the genesis of the manifestations of the most different types of cancer, covering elements of the work environment and the main habits of life and

consumption (tobacco and alcohol), related to this problem is evident.

Thus, the aim of this study is to describe the characteristics of the work profile and the use of alcohol and tobacco in patients diagnosed with head, neck, or lung cancer.

METHODS

Experimental Design

This was a quantitative, descriptive, exploratory, cross-sectional study. The study was carried out at the Oncology Center of the Hospital de Clínicas, Universidade Federal de Uberlândia (HC-UFU). In this service, an average of 349 consultations are performed daily, 100 chemotherapy procedures and 120 radiotherapy procedures. This study included patients diagnosed with head and neck cancer (included in this group: oral cavity, oropharynx, nasopharynx, hypopharynx, and larynx), or lung cancer, with diagnoses confirmed by biopsy, undergoing treatment/ follow-up in the period of April to November 2018, after approval by the Research Ethics Committee with the Opinion number: 2.570.195.

Population and sample

The study population consisted of 118 patients diagnosed with head, neck or lung cancer, confirmed by biopsy, that is, neoplasms classified by the ICD from C00.0 to C14.8, C31.0 to C32.9, C76.0 and C34, attended at the HC-UFU Oncology Center.

The survey sample was defined as a simple probabilistic and random type. For the analysis of the sample calculation of the study, so that it was considered a representation of the population to be studied, the 95% confidence level was taken into account, with a margin of error of more or less than 5%. The sample number needed was calculated as a minimum of 101 participants and a maximum of 148 participants (considering a safety margin of 10% for sample loss, filling out the data collection instrument incompletely and/or incorrectly).

Data collection instrument

The data collection instrument was composed of:

a) Sociodemographic, professional, and disease information.

The occupations and economic activities that present a relevant risk for work-related cancer were included in the questionnaire, according to the manual "Guidelines for the surveillance of work-related cancer", a publication of the Ministry of Health2. For data tabulation purposes, patients were divided into lung cancer patients and head and neck cancer patients.

b) Fagerstrom test: this test aimed to estimate the degree of nicotinic dependence, as it is an instrument used worldwide as an assessment tool. It was developed and introduced by the author in 1978, as a Fagerstrom tolerance questionnaire (FTQ) 7.

c) Alcohol Use Disorders Identification Test (AUDIT): this is an instrument developed by the World Health Organization8, in order to identify users who are in the initial stages, without a significant degree of harm related to alcohol. It presents questions that assess the quantity and frequency of alcoholism problems and alcohol dependence.

Data collection

The patients treated at the Oncology Center of HC-UFU were received at the department of the sector, responsible for separating the medical records and forwarding them to the waiting room of the doctors' offices. Starting from the knowledge of this routine, patients diagnosed with head, neck or lung cancer were identified and, during the period that awaited consultation, were approached by the researchers and invited to participate in the study, and were previously informed that their participation would occur on a voluntary and formalized basis, by signing the Informed Consent Form (ICF).

Inclusion and exclusion criteria

The inclusion criteria were: having a diagnosis of head, neck or lung cancer, confirmed by biopsy, over 18 years old, accepting to participate in the study, and signing the informed consent form. As an exclusion criterion, those patients that had a diagnosis of thyroid cancer and a diagnosis of skin cancer were excluded as there is no relationship with the risk factors being investigated according to the literature.

Data analysis

Data analysis was performed through the elaboration of a database in the Statistical Program of Social Science (SPSS) version 2.0, for Windows. Descriptive analyses were performed by calculating averages, percentages of variables, minimum values, maximum values, and standard deviation; meanwhile, the bivariate analysis of the data was performed using the Chi-squared and Fisher's exact tests. The level of significance (p-value) was set at 0.05 for all variables.

RESULTADOS

The sociodemographic characteristics of the studied population are shown in table 1. Regarding gender, there was a predominance of male cases (74.6%). When analyzing race/skin color, the majority of the sample 4.1% of the individuals identified themselves as white. Regarding religion, the predominant one was Catholic at 64.4%. It was observed that, in relation to the origin of the studied population, 51.7% live outside the municipality where they undergo their treatment. As for the level of education, most of the participants in the sample (47.5%) did not complete primary school. The income variable was investigated, taking into account the number of minimum wages received, and the majority of participants (59.8%) reported receiving one minimum monthly wage. Regarding marital status, 50.8% of individuals in the sample were married, and 48.3% said they lived with their spouse. When analyzing the age group of the studied group, of the 118 individuals, the median age was 60 years old, the maximum age found was 88 years, and the youngest individual was 25 years old.

Information related to the disease is also shown in Table 1. Among the individuals included in this study, the most frequent cancer was lung cancer, with 33.9% of cases. The average time to discover the diagnosis was 12.47 months, and the treatment was 9.89 months.

Table 2 describes the smoking habits of the individuals participating in the study, it is observed that of the total respondents, 81.4%, reported having already smoked, about 22.6 cigarettes per day. The average

age of onset of smoking was 15.4 years of age. When asked about living with smokers, 33.3% of participants reported that they lived with smokers at home. In relation to living with smokers in work environments, 75.4% of people said they had already worked with smokers and were exposed to cigarette smoke for an average of 6.66 hours a day. Table 2 also shows the results found by applying the Fagerstrom test. After applying the test to smokers participating in the study, it was identified that 30.21% of the individuals had a high degree of dependence.

The habits of alcohol consumption among patients with head, neck, and lung cancer, in this study are described in table 3. Among the 118 survey participants, 65.3% reported that they had used alcohol in the past. The average age when they started drinking alcoholic beverages was 18.28 years, and, on average, they stopped drinking at 51.38 years. Regarding the application of AUDIT, 36.6% were classified as consumers of low-risk alcoholic drinks or abstainers.

Table 4 shows the association between the variables gender, education, alcohol and tobacco use. It can be seen that the male participants said that they had already smoked (p=0.000) and had already consumed alcohol at least once a month (p=0.000). In addition, they also reported that they live with smokers (p=0.000), and work with people who smoke (p=0.000). Among individuals who did not complete their primary education, they responded more frequently that they worked with smokers (p=0.03), that they consumed "six or more doses" of alcoholic beverages at once (p=0.02), and demonstrated possible alcohol dependence, according to the AUDIT test (p=0.013).

It is possible to identify the association made between the most frequent occupations mentioned in the study and to analyze some aspects of their consumption of alcohol and tobacco. The individuals who work with cleaning and maintenance appeared to be associated with the fact that they have already caused damage or injury to themselves, or to others after drinking (p=0.01). The fact of working together with smokers was more frequent among rural workers (p=0.037) and among construction workers (p=0.047). Individuals working in agriculture and animal husbandry were those who smoked most frequently in the early hours of the day (p=0.050).

Table 5 describes the distribution of the type of occupation or economic activity of patients with head, neck, or lung cancer participating in the study. In relation to lung cancer, among the occupations and economic activities involved in the research, the occupations related to cleaning and maintenance activities were the most significant with 4.2%, and the economic activities were in rural work at 10.2%, followed by construction at 4.2%. The most relevant occupation in relation to patients with head and neck cancer was that of construction at 9.3%, and the economic activity related to agriculture and animal husbandry. Still, according to table 5, patients with head, neck and lung cancer showed a greater need to smoke in the morning (p=0.041) and had a greater need to drink at least once a month (p=0.031). When establishing an association between the type of occupation of the subjects and the location of the cancer, a greater association can be observed between lung cancer and workers in activities related to cleaning and maintenance (p=0.001), civil construction (p=0.001) and rural work (p = 0.000). Moreover, among patients with head and neck cancer, the related occupational activity was that of a construction (p=0.013).

Table 1 – Sociodemographic information and types of head, neck, and lung cancer. Uberlândia (MG), 2018 (N=118).

Variables	Tipo de Câncer			
	Cabeça e pescoço*		Pulmão	
	n	%	n	%
Sex				
Male	65	83.3%	23	57.5%
Female	13	16.7%	17	42.5%
Race				
White	35	44.9%	17	42.5%
Black	13	16.7%	5	12.5%
Yellow	0	0	1	2.5
Brown	30	38.5%	17	42.5%
Education				
Illiterate	3	3.8%	3	7.5%
Incomplete primary school	37	47.4%	19	47.5%
Incomplete high school	13	16.7%	7	17.5%
Complete high school	23	29.5%	8	20%
Higher education	2	2.6%	3	7.5%
Family income in amount of Minimum Wages (MW)				
Without income	2	2.6%	0	0
1 MW	43	55.8%	27	67.5%
2 MW	23	29.9%	10	25%
3 MW	4	5.2%	1	2.5%
4 MW	4	5.2%	1	2.5%
5 MW	0	0	1	2.5%
10 MW	1	1.3%	0	0
Marital status				
Not married	13	16.7%	4	10%
Married	42	53.8%	18	45%
Widower	6	7.7%	4	10%
Divorced	9	11.5%	9	22.5%
Judicially separated	8	10.3%	5	12.5%
Who they live with				
Spouse	38	48.7%	19	47.5%
Children	7	9%	8	20%
Relatives	13	16.7%	7	17.5%
Institutionalized	1	1.3%	0	0
Caregiver	0	0	0	0
Alone	5	6.4%	2	5%

*This vairable includes the percentages of the following types of cancer: Oropharynx (21.2%), Hypopharynx (5.1%), Oral cavity (13.6%), Larynx (19.5%), Nasopharynx (6.8%).

Table 2 – Tobacco use among patients with head, neck, and lung cancer. Uberlândia (MG), 2018 (N=118).

Variables		Descriptive analysis			
Smoker		**n**	**%**		
		No 22	18.6		
		Yes 96	81.4		
		118	**100**		
Smoker	**n**	**Average**	**Median**	**Mín**	**Máx**
Age at onset	94	15,00	5,31	7	41
Age when stopped	71	57,00	13,21	1	75
Number of cigarettes smoked per day	96	20,00	14,83	3	80
Lived with a smoker		**n**	**%**		
		78	66.7		
		39	33.3		
		117	**100**		
Spouse's smoking habit	**n**	**Average**	**Median**	**Mín**	**Máx**
Age at onset	10	16,00	3.47	10	22
Age when stopped	9	52,00	14.43	25	68
Number of cigarettes smoked per day	30	20,00	15.22	8	80
Works with Smokers		**n**	**%**		
		29	**24.6**		
		89	75.4		
		118	**100**		
	n	**Average**	**Median**	**Mín**	**Máx**
Age at onset	53	15,00	8.5	7	41
Age when stopped	58	57,00	9.39	25	73
Number of hours of exposure	77	8,00	3.45	0,5	12.0
Smoke intensity	89	2,00	0.83	1	3
Degree of dependence (*Fagerstrom*)		**n**	**%**		
		14	14.58		
		22	22.92		
		13	13.54		
		29	30.21		
		18	18.75		
		96	**100**		

Table 3 – Profile of alcohol consumption among patients with head, neck, and lung cancer. Uberlândia (MG), 2018 (N=118).

Alcohol consumption habits and history						
					n	%
Alcohol consumption				Yes, still drink	14	11.9
				Never drank	27	22.9
				Only in the past	77	65.3
	N	**Average**	**Median**	**Standard deviation**	**Mín**	**Máx**
Age at onset	88	18.28	16.00	6.91	7	41
Age when stopped	76	51.38	52.00	11.23	20	76
Assessment of alcohol consumption using the AUDIT application						
					n	%
Consumption characteristics				Low risk or abstinence	34	36.6
				Risk consumption	25	26.9
				High-risk harmful use	11	11.8
				Probable dependence	23	24.7
				Total	**93**	**100**

Table 4 – Association between work, sex, education, and alcohol and tobacco use. Uberlândia (MG), 2018 (N=118).

			Sexo masculino	Ensino fundamental incompleto	Valor de p*
Already smoked			80 (83.3%)		0.000
Live with smoker			21 (53.8%)		0.000
Worked with smoker			76 (85.4%)		0.000
Worked with smoker				48 (53.9%)	0.033
Have you used alcohol at least once a month			67 (87%)		0.000
Weekly take “six or more drinks” of alcohol at once				14 (63.6%)	0.002
Possible alcohol dependence (AUDIT criterion)				11 (47.8%)	0.013
	Cleaning and maintenance	Rural work	Construction work	Agriculture and livestock	P Value*
In the past 12 months, have I caused injury or damage to myself or someone else after drinking?	3 (18.8%)				0.01
Worked with smokers		12 (13.5%)			0.037
Worked with smokers			11 (12.4%)		0.047
Smokes more often in the early hours of the day, than during the rest of the day				9 (25%)	0.050

* Qui-quadrado

Table 5 – Association between the location of head, neck, and lung cancer and occupation, alcohol and tobacco consumption in patients treated at the oncology sector at HC-UFU. Uberlândia (MG), 2018 (N=118).

	Head and neck cancer	Lung cancer	P value*
Cleaning and maintenance		05 (100%)	0.001
Construction	11 (100%)		0.013
Construction		05 (100%)	0.001
Rural work		12 (100%)	0.000
Agriculture and livestock	17 (100%)		0.001
Do you smoke more often in the early hours of the day than at night?	28 (77.8%)	8 (22.2%)	0.041**
Still drinks at least once a month.	13 (92.9%)	1 (7.1%)	0.031**

*Chi-squared ** Fisher's exact test

DISCUSSION

The socioeconomic profile found in this study is men (74.6%), white (44.1%), married (50.8%), with an incomplete primary education (47.5%), Catholic (64.4%), with a monthly income of one minimum wage and a median age of 60 years. The most frequent type of cancer was lung cancer (33.9%), diagnosed in 12.47 months, and a treatment time of 9.89 months.

According to the National Cancer Institute José Alencar Gomes da Silva (INCA) (2019), currently in the world, lung cancer is among the main cancers in incidence, occupying the first position among men and third position among women, following the same proportion in Brazil. Cancer of the oral cavity appears with the fifth most frequent incidence in the male population, and esophageal and laryngeal cancers are also more common among people in this population[1].

Other sociodemographic characteristics, such as low income, low education, occupational activity, are also important in assessing the profile of cancer patients, since they are affected by their level of knowledge for adopting healthy lifestyle practices as well as to access to diagnosis and treatment of the disease already growing. There is a shortage of data on cancer diagnosis and treatment in Brazil; approximately 70% of lung cancer patients access health services with locally advanced or metastatic disease[5-6,9]. The most frequent economic activities and occupations in this study were: cleaning and maintenance (4.2%), rural work/agriculture and animal husbandry (19.5%), construction worker (13.5%). It should be noted that the municipality in which the study was developed accounts for about 11.2% of the Gross Domestic Product (GDP) of the State of Minas Gerais, whose sectoral distribution of jobs is divided into services (48%), trade (22%), industry (17%), agriculture (8%), and civil construction (5%)[10].

The main modifiable risk factor for cancer is smoking, especially with regard to the lung, head, and neck cancers, and it

is associated with 70 to 85% of cases1. In this study, it was identified that 81.4% of the participants reported having smoked, with an average of 22.6 cigarettes per day, and their age at the onset of the habit was 15.4 years old. A case-control study conducted in South Africa showed that using more than 14 grams of tobacco a day (equivalent to about half a pack of cigarettes), increases the risk of developing cancer in the larynx by four times[11].

Living with smokers and exposure to secondhand smoke also constitutes a risk for oncogenesis. In this study, it was identified that 33.3% of the participants lived with smokers at home, and 75.4% of these worked with smokers, with an average exposure to smoke of 6.66 hours a day. These rates are in line with a national survey of 39,425 participants that identified a 33% household exposure; however, with an environmental exposure of 55% for men and 45% for women[12], that is, below what was found in this study. A literature review showed a strong association between passive smoking and lung cancer (odds ratio between 1.16 and 1.44), and exposure in the workplace (odds ratio 1.04 and 1.68)[4]. One of the main complications for quitting smoking is due to the chemical and emotional dependence it causes; this study found that 30.21% of patients have a high degree of dependence on nicotine. In these cases, other evidence has shown that patients continue to use cigarettes after being diagnosed with cancer, with rates ranging from 12.8, 19, and 33%[13-15].

As for the consumption of alcoholic beverages, this research identified that 65.3% of the participants reported consumption in the past. According to the National Survey of Alcohol and Drugs, 39% of people drink five or more alcoholic beverages regularly, and 16% had criteria for alcohol abuse or dependence. One study showed that people who ingest 53 grams more of ethanol a day had approximately five times greater chance of developing cancer (men OR=4.72, 95% CI 2.64-8.41; women OR=5.24, 95% CI 3.34-8.23), when compared to non-drinkers. The association of smoking and drinking alcohol increases the chances of developing esophageal cancer by 8.45 times (95% CI 5.51-12.96) compared to non-smokers and non-drinkers[11]. Like cigarette smoking, alcohol abuse is a challenging factor in worsening patients with lung, head, and neck cancer, as according to this study 63.4% of patients had a harmful consumption or alcohol-dependency at the time of the study. A national study found that the habit of drinking five days or more a week was practically double among those who reported having cancer (OR=2.03; 95% CI 1.23-3.35), when compared to population not diagnosed with this disease among individuals who had been diagnosed with cancer ten years or more[4,15-16].

When assessing the associations between sociodemographic characteristics and the use of alcohol and tobacco, this study showed statistically significant associations (p=0.000) between males and the consumption of these substances. This finding corroborates other studies[16] and exposes a greater vulnerability of men to their abuse and dependence. In addition, it is worth considering that men with cancer tend to have different perceptions, experiences, and therapeutic itineraries than those compared to women. For them, work appears as a guarantee of male identity, and a rupture in its stability, proven by the disease, can raise gender stereotypes and beliefs that define what being a male is, which represent obstacles in the search for medical care[17].

This study shows that having an incomplete primary education was associated with working with smokers (p=0.03), consuming

more than six doses of alcohol at once (p=0.02) and alcohol dependence (p=0.013). With regards to tobacco, a national survey shows that the smoking population has fewer years of schooling than the non-smoking population[18], which would explain the greater social contact (including at work) with smokers. Conversely to these results, other Brazilian studies have shown that alcohol abuse was higher, as individuals' education increases; however, education was not associated with episodic excessive alcohol use[19-20]. A hypothesis for this difference would be that the present study was carried out in a hospital with care totally funded by the Unified Health System (SUS), which would imply that people with a higher education, and possibly with higher income, would be using private hospital services or health plans.

The relationship between occupation/economic activity and the drinking habits of the participants in this study appeared in "having caused harm or injury to themselves, or to another after they drank", with the occupation of cleaning and maintenance (p=0.01); and the fact of working together with smokers was associated with being a rural worker (p=0.037) or construction workers (p=0.047). Evidence suggests that[21-22] workers in these segments may have problems related to alcohol abuse, tobacco and other substances, precisely because they perform physically exhausting tasks which require dedication and little leisure and induce the use of a substance as a physical and mental relaxation strategy. Another association that emerged was that of working with agriculture and animal husbandry and smoking in the early hours of the day (p=0.050). An explanation for this finding may lie in the fact that, of course, the daily working hours of these workers begin at dawn.

The occurrence of cancer in the head and neck in this study showed a relationship with the need to smoke in the morning (p=0.041), and the need to drink at least once a month (p=0.031). According to other studies[2,4,11,23], the concomitant use of tobacco and alcohol enhances the carcinogenesis of this type of cancer, as well as that of several other forms and locations. This study indicated an association between the existence of lung cancer and activities related to cleaning and maintenance (p=0.001), construction (p=0.001), and rural work (p=0.000).

According to the Ministry of Health, carcinogenic agents of this type of cancer may be present in work environments such as: arsenic (production of pesticides), beryllium (used as an alloying component in ceramics for electrical or electronic application), cadmium (whose soil contamination can also determine important exposure by ingestion), chromium (used in refractory bricks, in alloys, paints and pigments, in wood preservation, and leather tanning), dust inhalation at work in coal mines and other heavy metals. Head and neck cancers were associated with the construction occupation (p=0.013). These workers may be exposed to carcinogens, such as: wood dust, work in the leather industry, exposure to crystalline silica, coal soot, wood, oil, asbestos, and organic solvents[2].

However, the results of this study should be observed sparingly, as it potentially had some limitations, such as: data collection was carried out in a single hospital (which possesses the regional characteristics, especially regarding the occupational profile), not having a control group with participants who do not have cancer to compare with, and not having been carried out with patients who did not come to the hospital during the data collection period or

were in remission. In addition, it should be stressed that the potentially modifiable risk factors may explain up to half the incidence of cancer. Further studies are needed to better understand the work profile of these exposed patients. Moreover, in the field of research on occupational risks, it is essential to understand other modifiable risk factors, aiming at public health surveillance and planning. It is reported that further research is needed to better understand avoidable behaviors for the development of cancer, as well as new ways to promote changes in these behaviors[3].

CONCLUSÃO

It is concluded that the majority of patients diagnosed with lung and head and neck cancer are males, self-declared as white, married, have an incomplete primary education, and aged over 60 years with a history of alcohol abuse and smoking. The most prevalent occupations and economic activities were linked to rural activity, civil construction, and maintenance and cleaning. It was identified that patients continue to use alcoholic beverages and tobacco, even after diagnosis, and during the treatment of the disease. There was also noted exposure at their homes and in their work environments, with these substances.

This study highlights the need for continuous, planned health care, with interventions and monitoring for changes in lifestyle, and the adoption of healthy habits; especially regarding the use of substances, including during cancer treatment. This study also corroborates the need to carry out actions to promote health and prevent oncogenic processes, of an individual and collective nature, in order to consider sociodemographic specificities, lifestyles and consumption habits, and work profiles, such as the work environment where people and communities are inserted.

REFERENCES

1. Ministério da Saúde (BR), Instituto Nacional do Câncer José Alencar Gomes da Silva. Estimativa 2020: incidência de câncer no Brasil [Internet]. Rio de Janeiro: INCA; 2019 [cited 2019 Aug 10]. Available from: https://www.inca.gov.br/sites/ufu.sti.inca.local/files/media/document/estimativa-2020-incidencia-de-cancer-no-brasil.pdf
2. Ministério da Saúde (BR), Instituto Nacional do Câncer José Alencar Gomes da Silva. Diretrizes para a vigilância do câncer relacionado ao trabalho [Internet]. Rio de Janeiro: INCA; 2013 [cited 2019 Aug 10]. Available from: https://www.inca.gov.br/sites/ufu.sti.inca.local/files//media/document//diretrizes-vigilancia-cancer-relacionado-2ed.compressed.pdf
3. Arem H, Loftfield E. Cancer epidemiology: a survey of modifiable risk factors for prevention and survivorship. Am J Lifestyle Med. 2018; 12(3):200-10. Doi: 10.1177/1559827617700600
4. Silva GA, Rezende LFM, Gomes FS, Souza Júnior PRB, Szwarcwald CL, Eluf Neto J. Lifestyle among former cancer patients in Brazil in 2013. Ciênc Saúde Colet. 2016; 21(2):379-88. Doi: 10.1590/1413-81232015211.24722015.
5. Vineis P, Wild CP. Global cancer patterns: causes and prevention. Lancet. 2014; 383(9916):549-57. Doi: 10.1016/s0140-6736(13)62224-2
6. Hastert TA, Ruterbusch JJ, Beresford SAA, Sheppard L, White E. Contribution of health behaviors to the association between area-level socioeconomic status and cancer mortality. Soc Sci Med. 2016; 148:52-8. Doi: 10.1016/j.socscimed.2015.11.023
7. Meneses-Gaya IC, Zuardi AW, Loureiro SR, Crippa JS. Psychometric properties of the Fagerström test for nicotine dependence. J Bras Pneumol. 2009; 35(1):73-82. Doi: 10.1590/S1806-37132009000100011

World Health Organization. AUDIT: the Alcohol Use Disorders Identification Test: guidelines for use in primary health care [Internet]. Geneva: WHO; 1982 [cited 2019 Aug 10]. Available from: https://www.who.int/publications/i/item/audit-the-alcohol-use-disorders-identification-test-guidelines-for-use-in-primary-health-care
9. Araújo LH, Baldotto C, Castro Júnior G, Katz A, Ferreira CG, Mathias C, et al. Lung cancer in Brazil. J Bras Pneumol. 2018; 44(1):55-64. Doi: 10.1590/s1806-37562017000000135
10. Federação de Comércio de Bens, Serviços e Turismo do Estado de Minas Gerais. Estudo sobre as regiões de planejamento de Minas Gerais [Internet]. Belo Horizonte: Fecomércio MG; 2018 [cited 2019 Aug 10]. Available from: http://www.fecomerciomg.org.br/wp-content/uploads/2018/02/Projeto-Estadual-Tri%C3%A2ngulo-imprensa.pdf
11. Sewram V, Sitas F, O'Connell D, Myers J. Tobacco and alcohol as risk factors for oesophageal cancer in a high incidence area in South Africa. Cancer Epidemiol. 2016; 41:113-21. Doi: 10.1016/j.canep.2016.02.001
12. Passos VMA, Giatti L, Barreto SM. Passive smoking in Brazil: results from the 2008 Special Survey on Smoking. Ciênc Saúde Colet. 2011; 16(9):3671-8. Doi: 10.1016/j.canep.2016.02.001
13. Almeida CPB, Silva DR. Passive smoking in Brazil: results from the 2008 Special Survey on Smoking. Rev G&S [Internet]. 2015 [cited 2019 Aug 10]; 6(2):1924-34. Available from: https://periodicos.unb.br/index.php/rgs/article/view/3036
14. Krane A, Terhorst L, Bovbjerg DH, Scheier MF, Kucinski B, Geller DA, et al. Putting the life in lifestyle: lifestyle choices after a diagnosis of cancer predicts overall survival. Cancer. 2018 Aug; 124(16):3417-26. Doi: 10.1002/cncr.31572
15. Silva PGB, Soares IL, Mendes FHO, Campêlo CSP, Cunha MPSS, Mota MRL, et al. Alcohol consumption history as a predictive factor of survival in patients with mouth and oropharyngeal squamous cell carcinoma: follow-up of 15 years. Rev Bras Cancerol. 2020; 66(1):e-02573. Doi: 10.32635/2176-9745.RBC.2020v66n1.573
16. Instituto Nacional de Ciência e Tecnologia para Políticas Públicas do Álcool e Outras Drogas, Universidade Federal de São Paulo. II Levantamento Nacional de Álcool e Drogas: relatório 2012 [Internet]. São Paulo: INPAD/UNIFESP; 2014 [cited 2019 Aug 10]. Available from: https://inpad.org.br/wp-content/uploads/2014/03/Lenad-II-Relat%C3%B3rio.pdf
17. Fernandes MJM, Carvalho GB, Ferreira CB. Impact of the diagnosis of cancer for men and women: a comparative study. Rev SPAGESP [Internet]. 2019 [cited 2019 Aug 10]; 20(2):68-83. Available from: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1677-29702019000200006&lng=pt
18. Bazotti A, Finokiet M, Conti IL, França MTA, Waquil PD. Smoking and poverty in Brazil: an analysis of the profile of the smoking population based on the 2008-09 brazilian government family budget survey. Ciênc Saúde Colet. 2016; 21(1):45-52. Doi: 10.1590/1413-81232015211.16802014.
19. Munhoz TN, Santos IS, Nunes BP, Mola CL, Silva ICM, Matijasevich A. Trends in alcohol abuse in brazilian state capitals from 2006 to 2013: an analysis of data from the VIGITEL survey. Cad Saúde Pública. 2017; 33(7):e00104516. Doi: 10.1590/0102-311x00104516
20. Machado ÍE, Monteiro MG, Malta DC, Lana FCF. Pesquisa Nacional de Saúde 2013: relação entre uso de álcool e características sociodemográficas segundo o sexo no Brasil. Rev Bras Epidemiol. 2017; 20(3):408-22. Doi: 10.1590/1980-5497201700030005
21. Costa AB, Silva JS, Oliveira TMS. Condições de trabalho que favorecem o desenvolvimento do alcoolismo. [article] [Internet]. Salvador: Escola Bahiana de Medicina e Saúde Pública; 2013 [cited 2020 Aug 12]. Available from: http://www7.bahiana.edu.br/jspui/bitstream/bahiana/594/1/Costa.AnitaBittencourt.2013.001.BAHIANA.pdf
22. Gavioli A, Mathias TAF, Rossi RM, Félix OML. Risks related to drug use among male construction workers. Acta Paul Enferm. 2014; 27(5):471-8. Doi: 10.1590/1982-0194201400077
23. Kfouri SA, Eluf Neto J, Koifman S, Curado MP, Menezes A, Daudt AW, et al. Fraction of head and neck cancer attributable to tobacco and alcohol in cities of three Brazilian regions. Rev Bras Epidemiol. 2018; 21:e180005. Doi: 10.1590/1980-549720180005

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