REVISTA
UNIMONTES CIENTÍFICA
(ISSN 2236-5257)

EPIDEMIOLOGICAL PROFILE OF THE POPULATION ASSISTED IN AN ORAL CANCER TRACKING PROGRAM: SOCIODEMOGRAPHIC CHARACTERISTICS, LIFE HABITS, AND CLINICAL CONDITIONS

Perfil epidemiológico da população assistida em um programa de rastreamento de câncer de boca: características sociodemográficas, hábitos de vida e condições clínicas

Maria Silveira Nunes[1]
Cybele Guedes Ramos[1]
Mariana Veloso Suzart[1]
Renata Furletti Nunes Barros Rego[2]
Príscila Bernardina Miranda Soares[3]
Marise Fagundes Silveira[4]
Mario Rodrigues de Melo Filho[7]

Abstract: Objective: This work aims to describe the sociodemographic, behavioral and clinical profile of the population attended in the oral cancer prevention exams during the 8th Cancer Prevention Campaign that took place in the municipality of Montes Claros, MG, Brazil, in 2018. **Methods:** A descriptive study was carried out based on the data obtained in the attendances performed in the Dentistry Tent during the 8th Cancer Prevention Campaign using a structured questionnaire covering their sociodemographic data, cancer family history, and behavioral characteristics. In order to obtain the clinical data related to oral neoplasms, oral examinations were performed by dentists. Frequency tables and graphs were used for the descriptive tabulation. **Results:** Oral cancer prevention exams were performed in 396 individuals, with an average age of 56.5 years, and the majority of them being women (66.1%). Most of the participants reported a cancer family history (55.2%), were active smokers (60.6%), and were not alcohol consumers (60.4%). A total of 36.6% of the participants reported the practice of physical activities three times a week. Only 1.8% reported a previous history of neoplasm. The most prevalent clinical features included dysphagia (19.9%), non-healing wounds (15.0%), and dysphonia (14.4%). **Conclusion:** The Cancer Prevention Campaign is extremely important regarding oral cancer, since it allows the screening, early diagnosis, and a better prognosis of this disease.

Keywords: Disease prevention; Oral Neoplasms.

Autor para correspondência: Maria Silveira Nunes
E-mail: maria-nunes@outlook.com.br

1- Faculdades Integradas Pitágoras - FIPMOC.
2- Faculdades Unidas do Norte de Minas - FUNORTE/Montes Claros-MG.
3- Médica oncologista, presidente da Associação Presente de Montes Claros.
4- Programa de Pós-Graduação em Ciências da Saúde da Universidade Estadual de Montes Claros - UNIMONTES.
5- Universidade Estadual de Montes Claros - UNIMONTES.

Resumo: Objetivo: Descrever o perfil sociodemográfico, comportamental e clínico da população assistida nos exames de prevenção de câncer de boca durante o 8º Mutirão de Prevenção ao Câncer no ano de 2018, realizado no município de Montes Claros, MG. **Metodologia:** Estudo descritivo que utilizou dados dos exames de prevenção de câncer de boca durante o 8º Mutirão de Prevenção ao Câncer. Foi adotado um questionário estruturado constituído por características sociodemográficas, histórico familiar de câncer e hábitos de vida. Para obtenção dos dados clínicos referentes à neoplasia de boca foram realizados exames bucais com odontologistas. Para descrição dos dados foram utilizados tabelas de frequência e gráficos. **Resultados:** foram realizados exames de prevenção do câncer de boca em 396 indivíduos com média de idade de 56,5 anos, cuja maioria era do sexo feminino (66,1%). Mais da metade dos participantes relataram história familiar de câncer, e prevaleceram pacientes que nunca fumaram (60,6%) e nunca beberam (60,4%). A prática de atividade física em três vezes na semana foi relatada por 36,6% dos participantes. 1,8% relataram história pregressa de neoplasia. Quanto às características clínicas mais prevalentes destaca-se a disfagia (19,9%), feridas que não cicatrizam (15,0%) e disfonia (14,4%). **Conclusão:** no que diz respeito ao câncer de boca, o Mutirão de Prevenção ao Câncer é de suma importância, uma vez que permite o rastreamento, o diagnóstico precoce e um melhor prognóstico.

Palavras-chave: Prevenção de Doenças; Câncer de Boca.

INTRODUCTION

Oral cancer is the one that affects the lips and the inner part of the oral cavity. It affects the inner part of the mouth, including gums, cheeks, palate, tongue, the area under the tongue, and the external area of the mouth and lips.[1] Recorded as the 6th more common malignant neoplasm in the world, oral cancer represents 5% of all malignant neoplasms.[2] All over the world, 300,000 cases of oral cancer occur annually, being responsible for almost 130,000 deaths every year, representing a major global public health major issue.[3] In Brazil, the disease presents 14,000 new cases per years, killing more than 4,000 Brazilians every year.[4]

The most well known risk factors associated with this kind of cancer are the following: smoking, alcoholism, and the HPV virus. According to the World Health Organization, about 90% of the patients diagnosed with oral cancer are smokers,[5] wince this is one of the major factors that unleash oral cancer.[6] The frequent ingestion of alcoholic beverages, by its turn, increases the risk to develop oral cancer. When both habits area associated, the risk of developing oral cancer is even higher.[5] Regarding lip cancer, it is usually associated to unprotected solar exposure along life[7], involving the other factors in a lower proportion.

Besides the aforementioned causes, oral cancer patients present deficient oral hygiene, besides a diet poor in proteins, vitamins, and minerals, but rich in fats.[8] One of the great challenges for the treatment of its first stages is the identification of the disease, since some types of cancer might not yield any symptoms until they have reached advance stages of the disease or, they might also be confused with other simpler dental problems that are able to produce similar symptoms.[9]

Brazil presents the 3rd highest incidence of oral cancer worldwide[4] and controlling the increasing rates of this cancer is still a challenge.[10] The Brazilian National Cancer Institute (Instituto Nacional do Câncer, Inca) "has estimated 15,490 new cancer cases for 2016, with 11,140 in men and 4,350 in women".[11] Tumors in this area are recorded more often in men older than 40 years, but might also occur in women and people of all ages, including children.[9] Men older than 40 years, smokers, with ill-fitting dental prosthesis, and fractured teeth are a risk group and should, therefore, avoid smoking and the ingestion of alcoholic beverages, perform proper oral hygiene, take care of their teeth, and attend regular dental visits.[6]

Since most people are not able to identify potentially malignant lesions, the early detection of oral cancer is therefore compromised.[12] Therefore, In order to detect possible lesions and the early diagnosis of the disease, the Padre Tiãozinho Association of Support to Cancer Patients (Associação Presente de Apoio a Pacientes com Câncer Padre Tiãozinho) – a non-governmental non-profit organization that welcomes and provides support to poor people that come to the city of Montes Claros and to the south of Bahia looking for cancer treatment – organizes the Cancer Prevention Campaign (CPC) in the municipality of Montes Claros-MG, since 2011. In this context, the present work aimed to describe the sociodemographic, behavioral, and clinical profile of the individuals attended in the oral cancer prevention over the 8th Cancer Prevention Campaign.

METODOLOGIA

This descriptive study is based in data ob-

tained in the 8th Cancer Prevention Campaign (CPC) carried out in Montes Claros, MG, Brazil, in 2018. The CPC has been organized annually in this municipality involving the voluntary participation of a multitask team of professionals that comprises 200 people among physicians, dentists, nurses, nurse technicians, dietician, psychologists, pharmaceutics, social workers, and scholars from many different healthcare specialties. The event takes place in the Dr. Carlos Square, located in the central region of Montes Claros, from 8:00h to 17:00h. Several tents are mounted in this place, each one of them providing medical assistance by expert professionals in each of the most prevalent neoplasms: oral, prosthesis, uterine cervix, skin, and breast cancer. In addition, a team of dieticians take the anthropometric measures of the individuals and provide nutritional guidelines.

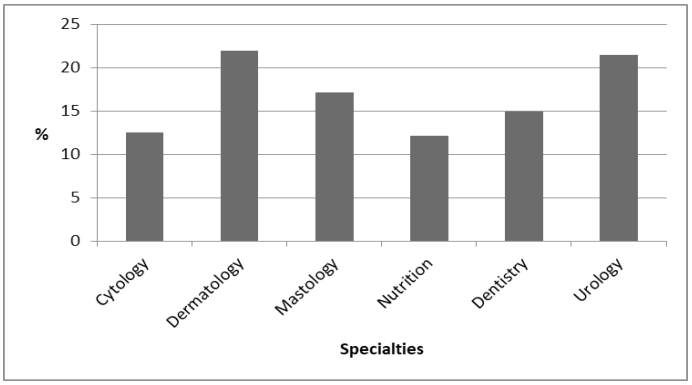
The data were collected from a questionnaire about the sociodemographic profile (sex, age group, civil state, and schooling level), cancer family history, and life habits (smoking, alcohol drinking, physical activity, and excessive solar) of the attended people. In order to obtain the clinical characteristics related to oral neoplasms (previous history of neoplasm, dysphonia, dysphagia, poor healing wounds, and ponderal for weight loss), oral exams were performed by dental experts. The data were tabulated and descriptively analyzed by means of frequency tables and charts, using the SPSS software, version 23.0.

This study was approved by the Committee on Ethics in Research (CER) of the Universidade Estadual de Montes Claros – Unimontes, according to the Report nº 2.599.222.

RESULTS

During the 8th CPC a total of 2,656 attendances were carried out, among which 21.88% were related to the prevention of oral cancer in the Dentistry Tent. The other medical specialties, with their respective percentages, are shown in Figure 1.

Figure 1 - Distribution of the attendances performed in the 8th MPC according to different medical specialties. Montes Claros, MG, Brazil, in 2018.



A total of 396 individuals took part in the oral cancer preventive exams with an average age of 56.5 (±13.1) years, most of which were women (66.1%). More than half of the participants (56.8%) were married or in a stable union and had an elementary level of education (63.8%) (Table 1).

Table 1 Sociodemographic profile of the individuals attended at the Cancer Prevention Campaign – Odontology, in Montes Claros – MG, Brazil, in 2018.

Variables	n*	%
Sex		
Male	134	33.9
Female	262	66.1
Age group		
Less than 40 years	41	10.4
40 to 59 years	179	45.4
60 years or more	174	44.2
Marital status		
Single	85	21.5
Married/stable union	225	56.8
Divorced/separated	41	10.4
Widow	45	11.3
Education		
Illiterate	30	7.6
Elementary	222	56.2
High school	117	29.6
Superior	22	6.6

* Totals vary due to information loss

Among the participants 55.2% reported a cancer family history. There was a higher prevalence of individuals that had never smoked (60.6%) and had never ingested alcohol (60.4%). The practice of physical activity in three or more times a week was reported by 36.6% of the participants (Table 2).

Table 2 – Characteristics of the individuals attended at the Cancer Prevention Campaign – Odontology, in Montes Claros – MG, in 2018, according to their cancer family history and life habits.

Characteristics	n*	%
Cancer Family History		
No	172	44.8
Yes	212	55.2
Smoking		
Yes	40	10.1
No	240	60.6
Ex-smoking	116	29.3
Alcoholism		
Yes	95	24.0
No	239	60.4
Ex-drinker	62	15.6
Weekly physical activity		
None	170	42.9
Once	42	10.6
Twice	39	9.8
Three or more times	145	36.7
Excessive solar exposure		
Yes	222	56.2
No	173	43.8

* Totals vary due to information loss

Only 1.8% of the participants reported a previous history of neoplasm. Regarding the clinical characteristics of the attended patients, the most prevalent symptom is dysphagia (19.9%), followed by the presence of poor healing wounds (15.0%), and dysphonia (14.4%). Further, 3.3% of the participants were referred to the Stomatology Clinic for additional investigation (Table 3).

Table 3 – Distribution of individuals attended in the Cancer Prevention Campaign – Odontology, in Montes Claros, Minas Gerais – MG, in 2018, according to their clinical characteristics.

Characteristics	n*	%
Prior History of Neoplasm		
Yes	7	1.8
No	372	98.2
Dysphonia		
Yes	56	14.4
No	332	85.6
Dysphagia		
Yes	78	19.9
No	392	80.1
Poor healing wounds		
Yes	57	15.0
No	324	85.0
Ponderal weight loss		
Yes	54	13.9
No	334	86.1
Referral to Stomatology clinic		
Yes	12	3.0
No	384	97.0

* Totals vary due to information loss

DISCUSSION

Cancer is a group of diseases that share the unordered multiplication of cells that infiltrate tissues and organs, which might yield metastases to other parts of the body. This multiplication of cells tend to be uncontrolled leading to the development of malignant tumors.[13] Malignant transformation of normal cells results from the interaction of internal and external causes.

The internal causes are related to genetic factors that act as important agents in the cellular changes, but neoplasms caused exclusively by these factors are rare.[13] The results obtained in the CPC show that 55.2% of the individuals presented

a cancer family history. Cancer is unleashed by genetic changes that are caused by external factors, being not a hereditary disease. These changes trigger DNA mutations in the somatic cells that might result in oncogenes and cause neoplasm[14,15].

Among the external causes involved in the malignant transformation of cells are environmental factors, which are responsible for 80% to 90% of cancers, including the risk factors such as: smoking, alcoholism, diet, body weight, sexual habits, occupational hazards, solar exposure, radiation, drugs.

The present work showed that 10.1% of the individuals had smoking habits and 29.3% declared to be ex-smokers. Tobacco is the major risk factor for unleashing oral cancer, since it contains more than 67 carcinogenic substances.[16] Therefore, the risk associated with the development of dysplastic lesions is seven times higher in smokers than in non-smoking individuals or ex-smokers for over 10 years.[17] A study about smoking showed that people that had smoked for more than 20 years and that smoked more than 20 cigarettes per day presented a higher risk of developing oral cancer than those that smoked from 1 to 20 cigarettes.[18]

Regarding alcohol ingestion, the CPC results show that 24.0% of the participants ingested alcoholic beverages. This is another major risk factor since the acetaldehyde, a metabolic derivative of ethanol acts as a carcinogenic substance, increasing the risk of neoplasm in nine times.[16] In addition, the association of smoking to the chronic ingestion of alcohol increases the risk of oral cancer from 6 to 15 times, when compared to the individuals that abstain from these substances.[18]

A total of 56.2% of the individuals were exposed to excessive solar radiation. This exposure without the proper protection along life might result in the development of oral cancer, being more frequent in white people and in the lower lips.[18] This continuous and prolonged exposure might result in actinic cheilitis, which in 17% of the cases might transform into slow-developing a malignant lesion.[19]

The results of the present study show that 42.9% of the individuals did not present any type of physical activity. Some epidemiological studies reveal that the regular practice of physical activity is a protective factor against neoplasms, since it might activate the unspecific immunological system.[20]

The symptomatology of the oral cancer involves mainly lesions in the oral cavity or lips that do not heal for more than 15 days; red or whitish blots or plaques in the tongue, gums, palate, jugal mucosa; neck nodules; persistent hoarseness. Dysphagia, dysphonia, and throat blockage sensation are present in the more developed stages.[21] According to the CPC data 14.4% of the individuals presented dysphonia, 19.9% dysphagia, and 15% had poor healing wounds. Thus, it is critical that healthcare professionals are capable of performing the oral cavity exam properly and follow the patients with the reported symptoms, in order to reduce the late diagnostic of oral cancer.[22]

In this context, the importance of the primary preventive activities is paramount, such as smoking control, reduction of alcohol ingestion, and of solar exposure, in order to reduce or eliminate the risk factors associated to cancer. In addition, prevention should involve the early diagnostic of cancer, occurring through monitoring campaigns and oral exams, both relevant for the detection of pre-malignant or malignant lesions, such as those performed during CPC, in which 3% of the participants were referred to the Stomatology Clinic for further investigation.

CONCLUSION

The CPC has been reaching an increasingly larger public in the municipality of Montes

Claros - MG. This campaign aims to early detect predisposing factors for the development of the most common neoplasms, such as those that affect the skin, mouth, prostate, uterine cervix, and breast.

Regarding oral cancer, such monitoring program is even more relevant, since neoplasms evolve from lesions that, sometimes, go unnoticed in their early stages by healthcare professionals. Thus, without any therapeutic intervention, they often develop into more advanced stages, being detrimental to the health of the affected patients.

Besides performing monitoring programs, this campaign also promotes educative measures designed for the public, involved in the promotion of a better healthcare provided by all the medical experts in the assessment and management of the patients with signs and symptoms of suspected neoplasms.

REFERENCES

1. Instituto Nacional de Câncer. Tipos de câncer: Boca. Rio de Janeiro, 2018. Available at: <http://www2.inca.gov.br/wps/wcm/connect/tiposdecancer/site/home/boca+/definicao>. Accessed in: July 18, 2018.

2. Sociedade Brasileira de Cirurgia de Cabeça e Pescoço. Incidência do câncer oral na cidade de São Paulo: Estudo retrospectivo de 6 anos. *Rev. SBCCP*, v. 44, nº 1, p. 1-6, jan-mar, 2015. Available at: <http://www.sbccp.org.br/wp-content/uploads/2014/04/RevSBCCP-44-1-artigo01.pdf>. Accessed in: July 18, 2018.

3. PETTI, S.; SCULLY, C. Determinants of oral cancer at the national level: just a question of smoking and alcohol drinking prevalence? *Odontology*, v. 98, n. 2, p.144-152, 2010.

4. Conselho Regional de Odontologia de Goiás. Câncer bucal cresce no Brasil. Goiás, 2018. Available at: <http://www.crogo.org.br/index.php/noticias/258-cancer-bucal-cresce-no-brasil>. Accessed in: July 18, 2018.

5. Instituto Nacional de Câncer. Tipos de câncer: Boca – Prevenção. Rio de Janeiro, 2018. Available at: http://www2.inca.gov.br/wps/wcm/connect/tiposdecancer/site/home/boca/prevencao Accessed in: July 18, 2018.

6. VIEIRA, A. C.; AGUIAR, Z. S. T.; SOUZA, F. V. Tabagismo e sua Relação com o Câncer Bucal: uma Revisão de Literatura. *Rev. Bionorte*, v. 4, n. 2, jul, 2015. Available at: < http://www.revistabionorte.com.br/arquivos_up/artigos/a11.pdf>. Accessed in: July 18, 2018.

7. OLIVEIRA, L. R.; RIBEIRO-SILVA, A.; ZUCOLOTO, S. Perfil da incidência e da sobrevida de pacientes com carcinoma epidermóide oral em uma população brasileira. *J. Bras. Patol. Med. Lab.* Rio de Janeiro, v. 42, n. 5, p. 385-392, out. 2006. Available at: < http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1676-24442006000500010> Accessed in: July 18, 2018.

8. FARIA, S. D. C. *A importância do diagnóstico precoce e prevenção do câncer bucal na estratégia saúde da família.* Trabalho de Conclusão de Curso (Curso de especialização em atenção básica em saúde da família). Escola de Medicina, Universidade Federal de Minas Gerais. Minas Gerais, 2014. Available at: < https://www.nescon.medicina.ufmg.br/biblioteca/imagem/4389.pdf> Accessed in: July 18, 2018.

9. Instituto Oncoguia. Detecção Precoce do Câncer de Boca e Orofaringe. Brasil, 2018. Available at: http://www.oncoguia.org.br/conteudo/deteccao-precoce-do-cancer-de-boca-e-orofaringe/7428/279/ Accessed in: July 18, 2018.

10. PEREA, L. M. E. *et al.* Tendência de mortalidade por câncer de boca e faringe no Brasil no período 2002-2013. *Rev. Saúde Pública.* São Paulo, v. 52, 10, 2018. Available at: <http://www.scielo.br/pdf/rsp/v52/pt_0034-8910-rsp-S1518-87872018052000251.pdf>. Accessed in: July 18, 2018.

11. Instituto Nacional de Câncer. Dos casos de câncer de boca, 90% ocorrem em fumantes. Rio de Janeiro, 2018. Available at: <http://www2.inca.gov.br/wps/wcm/connect/agencianoticias/site/home/noticias/2017/dos-casos-de-cancer-de-boca-90-ocorrem-em-fumantes>. Accessed in: July 18, 2018.

12. Instituto Nacional de Câncer. Novas diretrizes para a detecção precoce do câncer de boca. Rio de Janeiro, 2018. Available at: <http://www2.inca.gov.br/wps/wcm/connect/237e65804eb692b2871297f11fae00ee/09_prevencao.pdf?MOD=AJPERES >. Accessed in: July 18, 2018.

13. INCA. Instituto Nacional do Câncer. *O que é câncer?* Available at: <http://www1.inca.gov.br/conteudo_view.asp?id=322>. Accessed in: July 19, 2018.

14. DO PRADO, B. B. F. Influência dos hábitos de vida no desenvolvimento do câncer. *Cienc. Cult.,* São Paulo, v. 66, n. 1, p. 21-24, 2014. Available at: < http://cienciaecultura.bvs.br/scielo.php?script=sci_arttext&pid=S0009-67252014000100011&lng=en&nrm=iso>. Accessed in: July 28, 2018.

15. INCA. Instituto Nacional do Câncer. *Perguntas e respostas sobre o câncer.* Available at: <http://www1.inca.gov.br/conteudo_view.asp?id=83>. Accessed in: July 28, 2018.

16. PINHEIRO, S. M. S.; CARDOSO, J. P.; PRADO, F. O. Conhecimentos e diagnóstico em câncer bucal entre profissionais de odontologia de Jequié, Bahia. *Revista Brasileira de Cancerologia*, v. 56, n. 2, p. 195-205, 2010.

17. GOUVEA, S. A. *et al.* Aspectos clínicos e epidemiológicos do câncer bucal em um hospital oncológico: predomínio de doença localmente avançada. *Rev. Bras. Cir. Cabeça Pescoço,* v. 39, n. 4, p. 261-265, 2010.

18. ANDRADE, J. O. M.; SANTOS, C. A. S. T.; OLIVEIRA, M. C. Fatores associados ao câncer de boca: um estudo de caso-controle em uma população do Nordeste do Brasil. *Revista Brasileira de Epidemiologia*, v. 18, p. 894-905, 2015.

19. MARTINS, R. B.; GIOVANI, E. M.; VILLALBA, H. Lesões cancerizáveis na cavidade bucal. *Rev. Inst. Ciênc. Saúde*, v. 26, n. 4, p. 467-476, 2008.

20. ORTEGA, E.; PETERS, C.; BARRIGA, C.; LOTZERICH, H. A atividade física reduz o risco de câncer?. *Revista Brasileira de Medicina do Esporte,* v. 4, n. 3, p. 81-86, 1998.

21. INCA. Instituto Nacional do Câncer. *Câncer de boca: sintomas*. Available at: <http://www2.inca.gov.br/wps/wcm/connect/tiposdecancer/site/home/boca/sintomas>. Accessed in: July 19, 2018.

22. DE OLIVEIRA, J. M. B.; PINTO, L. O.; LIMA, N. G. M.; DE ALMEIDA, G. C. M. A. Câncer de boca: avaliação do conhecimento de acadêmicos de Odontologia e Enfermagem quanto aos fatores de risco e procedimentos de diagnóstico. *Rev. Bras. Cancerol,* v. 59, n. 2, p. 211-218, 2013.