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ORIGINAL ARTICLE

Nutritional risk and associated factors in patients with head and neck cancer in a referral hospital in Brazil

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Abstract

Introduction: head and neck cancer is one of the most prevalent cancers, often associated with factors such as smoking and alcohol consumption. Malnutrition is common among these patients, with many showing nutritional risk even before treatment begins.

Objective: the objective of this study was to identify the factors associated with nutritional risk in patients with head and neck cancer .

Methods: patients with head and neck cancer from a referral cancer treatment hospital in Brazil were included in the study. A semi-structured questionnaire was used to gather socioeconomic and clinical information, and anthropometric assessment was performed. Nutritional risk was screened using the Nutritional Risk Screening and symptoms of nutritional impact were assessed through the “Head and Neck Symptoms Checklist.” Binary logistic regression was used to quantify the influence of independent variables on the outcome, with a significance level of less than 5%.

Results: of the 132 study participants, 46.2% were at nutritional risk. Family income ≤ 2 minimum wages increased the chances of developing nutritional risk by 2.9 times (OR = 2.916; 95% CI = 1.017-8.359; p = 0.046). Additionally, each centimeter increase in calf circumference (CC) reduced the chances of being at nutritional risk by 24.9% (OR = 0.751; 95% CI = 0.646-0.873; p < 0.001).

Conclusion: individuals with lower income have higher chances of nutritional risk, while greater CC contributes to a reduction in this risk, highlighting these factors as critical determinants of nutritional status in patients with head and neck cancer .

Keywords: screening, nutritional status, upper gastrointestinal tract, sociodemographic factors.

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Authors summary

Why was this study done?
This study was conducted to identify factors associated with nutritional risk in patients with head and neck cancer (HNC). Since this population has a high prevalence of malnutrition due to multiple factors, early detection of nutritional risk is essential for effective interventions and improved clinical outcomes.

What did the researchers do and find?
The researchers evaluated 132 patients with HNC at a referral hospital in Brazil. Socioeconomic, clinical, and anthropometric data were collected, along with nutritional risk screening using the Nutritional Risk Screening (NRS-2002) and assessment of symptoms of nutritional impact. The results showed that 46.2% of the patients were at nutritional risk. Family income ≤ 2 minimum wages increased the chances of nutritional risk by 2.9 times, while each additional centimeter in calf circumference (CC) reduced this risk by 24.9%.

What do these findings mean?
The findings indicate that socioeconomic and anthropometric factors play a crucial role in the nutritional risk of patients with HNC. Nutritional screening and CC assessment can be valuable tools for early detection and targeted nutritional interventions, contributing to the improvement of nutritional status and quality of life for these patients.

INTRODUCTION

Head and neck cancer (HNC) includes tumors of the upper respiratory/digestive tract, such as the oral cavity, oropharynx, nasal cavity, nasopharynx, hypopharynx, larynx, and salivary glands[1]. HNC is the seventh most common cancer worldwide and ranks fifth among the most prevalent types of cancer in men in Brazil, fourth in the Southeast region, and third in countries with a low or medium Human Development Index (HDI)[2–4]. The main causes of HNC are related to smoking, alcohol consumption, viral exposure to Human Papillomavirus (HPV), and a nutrient-poor diet, with tobacco being identified as the leading behavioral risk factor for the development of this disease[5].

Malnutrition is a common condition in individuals with HNC[6,7], and approximately 30.3% of this population is at nutritional risk before treatment initiation[8]. Several factors related to cancer patients can contribute to malnutrition, such as reduced food intake, tumor location, and symptoms arising from the disease, which trigger a hypercatabolic process and intensify the loss of skeletal muscle mass, depleting the nutritional status[2,9].

Nutritional status can be monitored using anthropometric measures, such as calf circumference (CC), which is closely associated with skeletal muscle mass and directly affected by events inherent to the processes of frailty, malnutrition, and cancer cachexia[10,11]. Early detection of nutritional risk allows for the implementation of actions that can have significant results in the preservation or recovery of nutritional status. Nutritional screening, recommended by the European Society for Clinical Nutrition and Metabolism (ESPEN), is an essential tool to identify patients who need nutritional support early, especially in vulnerable populations, to identify patients requiring early nutritional intervention[12–14].

Among the methods, the NRS-2002 stands out as an instrument recommended for use in hospital settings due to its quick and easy application15,16. It is frequently used in studies involving HNC patients before treatment, demonstrating its ability to detect malnutrition and nutritional risk[13,17]. According to the Brazilian Consensus on Oncology Nutrition (2021), the NRS-2002 can be used for both clinical and surgical patients[18].

Simplified strategies can also be used to aid in the detection and diagnosis of nutritional risk, such as measuring the CC, as it is a simple, low-cost, non-invasive method with a good correlation to muscle mass[19].

In light of the above, the aim of this study is to identify factors associated with nutritional risk as assessed by the NRS-2002 in HNC patients. Understanding the associated variables may facilitate a rapid approach and early detection of risk in this population. This, in turn, may contribute to better nutritional management and potentially better health outcomes.

METHODS

Study design

This is an epidemiological, analytical, cross-sectional investigation of individuals with HNC. The data represents the baseline of a longitudinal study titled "Nutritional Indicators, Mortality, and Associated Factors: A Hospital-Based Study in Individuals with HNC." The study was conducted at a reference hospital in Brazil.

For the sample size calculation, a population of 200 patients was considered, which corresponds to the average annual number of first consultations for HNC in the outpatient clinic, with a prevalence of 50%, a sample error of 5%, and a 95% confidence interval (CI). This resulted in a minimum sample size of 132 individuals. The calculation was performed with the help of the Epidat 4.2 software.

Study location and period

Data were collected from September 2022 to January 2024. The individuals were invited to participate after the confirmation of the HNC diagnosis by the Head and Neck Surgery Medical Service, and the study was exclusive to patients from the Unified Health System.

Study population and eligibility criteria

Individuals of both sexes, aged 18 years or older, with a diagnosis of squamous cell carcinoma of the oral cavity, larynx, oropharynx, and hypopharynx, with no previous oncological treatment, were included. The cases were confirmed by histology and classified according to ICD-10-0320, based on the following topographies: base of the tongue (C01), oral cavity, other parts and unspecified parts of the tongue (C02), gingiva (C03), floor of the mouth (C04), palate (C05), other parts and unspecified parts of the mouth (C06), tonsil (C09), oropharynx (C10),

pyriform sinus (C12), hypopharynx (C13), and larynx (C32). Subsequently, the ICD codes were grouped into three topographical categories: oral cavity (C01, C02, C03, C04, C05); oropharynx (C05.1, C09, C10); larynx and hypopharynx (C32, C12, C13).

Patients with recurrent squamous cell carcinoma and/or those with prior treatment, those with more than one tumor, and patients without the clinical or mental conditions to respond to the questionnaire were excluded from the study.

Data collection

A questionnaire was applied containing sociodemographic variables (sex, age, race/color, education, and income), lifestyle habits (smoking, alcohol consumption, and physical activity), clinical data (topography and staging), and changes in the consistency of consumed foods. Anthropometric measurements (weight, height, and CC) were also taken. It is important to note that sociodemographic variables, lifestyle habits, and changes in food consistency were collected through self-report.

Nutritional impact symptoms (SIN) screening was conducted using the "Head and Neck Symptoms Checklist"[21], which consists of 17 SIN evaluated on a five-point Likert scale, ranging from "1, none" to "5, very much." For analysis, the scores of the 17 symptoms were summed to obtain a total score, ranging from 17 (no symptoms) to 85 (maximum score). In addition, nutritional risk screening was performed using the NRS-2002[15], an instrument recommended by the ESPEN. The method involves two steps: the first includes questions about body mass index, weight loss, reduced food intake, and the presence of severe disease. In the second step, each criterion is quantified based on nutritional status and disease severity, with an additional point for patients aged ≥ 70 years. A total score < 3 indicates no risk, while a total score ≥ 3 indicates the presence of nutritional risk.

Data analysis

The dependent variable used was nutritional risk determined by the NRS-2002, classified as "no risk" and "at risk." Central tendency and dispersion measures were used for continuous variables, according to the normality test. For categorical variables, absolute and relative frequencies were used. To test the association between the dependent variable and the independent variables, the Chi-square test and the Mann-Whitney test were used. The significance level for all tests was 5%.

To quantify the contribution of the independent variables to the outcome, binary logistic regression was performed, including independent variables with significance lower than 5% ($p \leq 0.05$) in the bivariate association tests. The assumption of no multicollinearity and model adjustment according to the Hosmer-Lemeshow test were considered. Odds Ratios (OR) and their respective CI were estimated.

To assess the relationship between the NRS-2002 and CC variables, Spearman's correlation was performed, and the correlation coefficient was calculated to determine the strength and direction of the relationship between the two variables. Subsequently, the Kappa coefficient was performed to evaluate the agreement between the two variables in categorical behavior, such as NRS-2002 ("at risk" and "no risk") and CC ("adequate" and "inadequate").

The data were managed using the REDCap platform[22] and stored in the cloud of the Federal University of Espírito Santo (UFES). Data organization and analysis were performed using the Statistical Package for the Social Sciences (SPSS®), version 22.0.

Ethical and legal aspects of the research

The research was approved by the Ethics Committee of the Center for Health Sciences at UFES, under final opinion no. 5.292.703 and CAAE 56453322.70000.5060. All participants who agreed to participate in the research signed the Informed Consent Form.

RESULTS

According to table 1, most participants were older adults (59.8%), male (77.3%), and of mixed race (54.5%). The majority lived with a partner (53.8%), had low education (71.2%), and resided in the metropolitan area of Vitória-ES (65.9%). Of the total, 75.0% had a family income of less than or equal to 2 minimum wages.

Regarding clinical data, 62.2% reported having a family history of cancer. Regarding the tumor stage at the time of diagnosis, the more advanced stages, such as III and IV, were more frequent (77.4%), and most had tumors in the oral cavity (44.7%). The majority reported past tobacco (52.3%) and alcohol (65.2%) use, with a median of 90 ± 144 packs/year for smokers and 180 ± 304.5 packs/year for ex-smokers. Physical inactivity was predominant in the sample (84.1%).

Regarding nutritional and anthropometric variables, it was observed that more than half of the sample reported a change in the consistency of foods consumed (56.8%). The average value for CC was 34 ± 4.08 cm. According to the NRS-2002, 46.2% of participants were at nutritional risk, with a median score of 2 ± 3 (table 1).

Table 1: Sociodemographic, clinical, lifestyle, nutritional, and anthropometric data distributed according to nutritional risk in patients with head and neck cancer from a reference hospital in Brazil, 2022-2024

Variable	Nutritional Risk (NRS-2002)			
	Total	No	Yes	p-value
	N (%)	N (%)	N (%)	
Age Category				0.108
Adult	53 (40.2)	24 (33.8)	29 (47.5)	
Older adults	79 (59.8)	47 (66.2)	32 (52.5)	

Continuation - Table 1: Sociodemographic, clinical, lifestyle, nutritional, and anthropometric data distributed according to nutritional risk in patients with head and neck cancer from a reference hospital in Brazil, 2022-2024

Variable	Nutritional Risk (NRS-2002)			
	Total	No	Yes	p-value
	N (%)	N (%)	N (%)	
Sex				0.107
Female	30 (22.7)	20 (28.2)	10 (16.4)	
Male	102 (77.3)	51 (71.8)	51 (83.6)	
Occupation				0.255
Employed	46 (34.8)	28 (39.4)	18 (29.5)	
Retired/Pensioner	57 (43.2)	31 (43.7)	26 (42.6)	
Unemployed	29 (22.0)	12 (16.9)	17 (27.9)	
Marital Status				0.006
Lives with partner	71 (53.8)	46 (64.8)	25 (41.0)	
Does not live with partner	61 (46.2)	25 (35.2)	36 (59.0)	
Education				0.254
≤ 8 years of schooling	94 (71.2)	49 (69.0)	45 (73.8)	
9 to 10 years of schooling	23 (17.4)	11 (15.5)	12 (19.7)	
≥ 11 years of schooling	15 (11.4)	11 (15.5)	4 (6.6)	
Race				0.212
White	47 (35.6)	26 (36.6)	21 (34.4)	
Black	13 (9.8)	4 (5.6)	9 (14.8)	
Mixed race	72 (54.5)	41 (57.7)	31 (54.5)	
Residence				0.303
Metropolitan area of Vitória	87 (65.9)	44 (62.0)	43 (70.5)	
Outside metropolitan area of Vitória	45 (34.1)	27 (38.0)	18 (29.5)	
Family Income1				0.003
≤ 2 Minimum wages	99 (75.0)	46 (64.8)	53 (86.9)	
> 2 Minimum wages	33 (25.0)	25 (35.2)	8 (31.1)	
Family History of Cancer				0.977
Yes	79 (62.2)	43 (62.3)	36 (62.1)	
No	48 (37.8)	26 (37.7)	22 (37.9)	
Tumor Stage2				0.139
I - II	28 (22.6)	19 (27.5)	9 (16.4)	
III - IV	96 (77.4)	50 (72.5)	46 (83.6)	
Topography				0.616
Oral Cavity	59 (44.7)	34 (47.9)	25 (41.0)	
Larynx/Pharynx	34 (25.8)	16 (22.5)	18 (29.5)	
Oropharynx	39 (29.5)	21 (26.6)	18 (29.5)	
Smoker				0.121
No	25 (18.9)	18 (25.4)	7 (11.5)	
Yes	38 (28.8)	18 (25.4)	20 (32.8)	
Used to smoke	69 (52.3)	35 (49.3)	34 (55.7)	
Pack/Year – Smokers*	90 ± 144	119 ± 180	72 ± 144	0.258
Pack/Year – Ex-smokers*	180 ± 304.5	150 ± 306	360 ± 450	0.150

Continuation - Table 1: Sociodemographic, clinical, lifestyle, nutritional, and anthropometric data distributed according to nutritional risk in patients with head and neck cancer from a reference hospital in Brazil, 2022-2024

Variable	Nutritional Risk (NRS-2002)			
	Total	No	Yes	p-value
	N (%)	N (%)	N (%)	
Alcohol Consumption				0.160
Não	21 (15.9)	15 (21.1)	6 (9.8)	
Yes	25 (18.9)	11 (15.5)	14 (23.0)	
Used to consume	86 (65.2)	45 (63.4)	41 (67.2)	
Physical Activity				0.077
Yes	21 (15.9)	15 (21.1)	6 (9.8)	
No	111 (84.1)	56 (78.9)	55 (90.2)	
Change in Food Consistency				0.052
No	57 (43.2)	37 (52.1)	20 (32.8)	
Yes	75 (56.8)	34 (47.9)	41 (67.2)	
Severity of SIN*	33 ± 15	30 ± 15	36 ± 15	0.004
Impact on Eating SIN*	25 ± 15.75	21 ± 14	30 ± 19	0.000
CC**	34.03 ± 4.08	36 ± 3.3	31.8 ± 3.8	0.000

Chi-square test. *Mann-Whitney test. **T-test. *Data expressed as p50 ± interquartile range (IQR); **Mean and standard deviation (SD). Statistically significant difference in bold (p<0.05). N=132. ¹N=127. ²N=124. SIN: Nutritional Impact Symptoms. CC: Calf circumference.

The sociodemographic, clinical, lifestyle, nutritional, and anthropometric data were analyzed according to the nutritional risk classification assessed by the NRS-2002. An association was found between nutritional risk and marital status, with a higher risk among individuals who are not living with a partner (p = 0.006). Nutritional risk was also associated with family income, particularly among those with an income equal to or less than two minimum wages (p = 0.003), changes in food consistency (p = 0.052), severity of SIN, interference in eating due to SIN, and CC (p < 0.001).

The correlation between the NRS-2002 and CC was negative and moderate, with a coefficient of -0.547. This indicates that as CC increases, nutritional risk tends to decrease. The correlation was statistically significant at the 0.001 level (two-tailed), showing a strong negative association between the NRS-2002 and CC.

The concordance between the NRS-2002 and CC methods was tested using Cohen's Kappa Index. The Kappa value was 0.465 (p < 0.001), indicating a significant and moderate concordance between the two assessment methods, considering the NRS-2002 classification and the cutoff point for CC of ≤33 cm for women and ≤34 cm for men as indicative of inadequacy[23,24]. This finding suggests that both methods have moderate capacity to assess nutritional status, but they are not fully concordant.

In the multivariable analysis using binary logistic regression (table 2) with nutritional risk as the dependent variable, after model adjustment, family income and CC remained associated with the outcome. Patients with a family income of less than or equal to two minimum wages had 2.9 times higher odds (OR = 2.916; 95% CI = 1.017-8.359; p = 0.046) of developing nutritional risk compared to those earning more than two minimum wages. Regarding the anthropometric variable, it was identified that CC was also associated with nutritional risk (OR = 0.751; 95% CI = 0.646-0.873; p < 0.001), indicating an inverse relationship, where each additional centimeter in CC was associated with a 24.9% reduction in the odds of participants being at nutritional risk.

Table 2: Multivariate analysis of nutritional risk and sociodemographic, nutritional, and anthropometric variables in patients with head and neck cancer at a reference hospital in Brazil, 2022-2024

Variables	Unadjusted				Adjusted			
	p-value	OR	95% CI		p-value	OR	95% CI	
			Lower limit	Upper limit			Lower limit	Upper limit
Sex								
Female		1				1		
Male	0.111	2.000	0.853	4.691	0.309	1.697	0.613	4.697
Age								

Continuation - Table 2: Multivariate analysis of nutritional risk and sociodemographic, nutritional, and anthropometric variables in patients with head and neck cancer at a reference hospital in Brazil, 2022-2024

Variables	Unadjusted				Adjusted			
	p-value	OR	95% CI		p-value	OR	95% CI	
			Lower limit	Upper limit			Lower limit	Upper limit
Adulta		1				1		
Older adults	0.110	0.563	0.279	1.138	0.097	0.449	0.174	1.157
Marital Status								
Living with partner		**1**				1		
Not living with partner	**0.007**	**2.650**	**1.309**	**5.364**	0.143	1.934	0.801	4.668
Family Income								
≤ 2 minimum wages	**0.005**	**0.278**	**0.114**	**0.675**	**0.046**	**2.916**	**1.017**	**8.359**
> 2 minimum wages		1				1		
Dietary Consistency Change								
No		1				1		
Yes	**0.027**	**2.231**	**1.098**	**4.533**	0.428	1.447	0.580	3.610
CC	**0.000**	**0.705**	**0.616**	**0.807**	**0.000**	**0.737**	**0.636**	**0.855**
Severity of SIN	**0.004**	**1.050**	**1.016**	**1.086**	0.920	0.996	0.921	1.077
Impact on Eating SIN	**0.001**	**1.060**	**1.025**	**1.097**	0.227	1.048	0.971	1.130

Binary logistic regression (unadjusted and adjusted). Hosmer-Lemeshow test: 0.111; Nagelkerke R^2: 0.472; Statistically significant differences in bold ($p < 0.05$). OR: Odds Ratio. CI: Confidence Interval. SIN: Nutritional Impact Symptoms. CC: Calf circumference. (a) Adjustment variables.

DISCUSSION

The results of the present study indicate that factors such as low income and CC are associated with nutritional risk in patients with HNC.

The sample is predominantly composed of older adults male individuals of mixed race, with low socioeconomic status, sedentary lifestyles, and a history of tobacco and alcohol use. This set of characteristics is consistent with studies addressing the epidemiology and risk factors for HNC[3,25]. Low socioeconomic status is a prominent feature among groups most susceptible to HNC, and it was one of the most frequent factors in the studied population, corroborating the findings of an epidemiological study conducted in an Oncological Research Center in the South of Brazil with patients with HNC[26,27].

According to Barsouk *et al.*[27], difficulty in accessing the healthcare system for disease prevention and screening is one of the factors that highlights low income as a risk characteristic for the development of HNC. Indirectly, low socioeconomic status is also associated with the main risk factors for disease development, such as smoking and alcohol consumption, with this profile showing a higher tendency to consume both[27].

Contributing to the increase in nutritional risk, lower socioeconomic classes are associated with the presence of malnutrition in the oncological population, highlighting a potential link to food insecurity in individuals with low purchasing power[28]. Food insecurity is characterized by the lack of access to adequate and nutritious food due to financial constraints or other limiting factors[29]. Gajda *et al.*[30] identified a significant relationship between food insecurity and nutritional risk in older adults individuals, demonstrating that low food security is associated with a higher nutritional risk, which may be one of the factors contributing, along with other aspects, to the findings of the present study.

Low muscle mass is a common consequence of nutritional risk and is related to longer hospitalization, lower treatment tolerance, and higher mortality risk[31,32]. CC is an anthropometric measurement highly correlated with direct and indirect measures of skeletal muscle mass[33,34]. Assuming that CC reflects skeletal muscle mass, we can explain the relationship with nutritional risk through its ability to indicate the presence of malnutrition and sarcopenia.

Ren *et al.*[35] identified a significant relationship between CC and nutritional risk in a longitudinal study, suggesting that a low CC may be a predictive indicator of nutritional risk in patients over 80 years old. This finding is similar to what we found in our study. Although our sample is predominantly composed of older adults individuals, it also encompasses a broader age range. According to the results obtained, each centimeter increase in CC corresponds to a 24.9% reduction in the likelihood of nutritional risk. Previous studies have demonstrated that CC is a valid and reliable indicator of muscle mass[19,33]. Thus, a reduced CC may be an early sign of muscle mass decline.

In addition to the potential risk associated with low CC in establishing nutritional risk, we evaluated the correlation and concordance between the NRS-2002

and CC. The results showed a negative and moderate correlation (-0.547; $p < 0.001$) and an acceptable magnitude of concordance ($\kappa = 0.465$; $p < 0.001$), indicating that both methods are capable of identifying the presence of nutritional risk, although they are not fully concordant. Srinivasaraghavan *et al.*[36] assessed the concordance of CC with nutritional screening methods and showed that CC exhibited good concordance, which could be used to identify outpatient malnutrition and facilitate early nutritional intervention, corroborating our findings. Other studies have also explored the applicability of CC as a substitute method for indicating sarcopenia, malnutrition, and the risk of hospital readmission, with some of them covering populations from middle-aged adults to older adults individuals[37,38].

It is important to emphasize the significance of nutritional risk assessment, given the high prevalence of malnutrition at hospital admission and the negative outcomes associated with this clinical condition[14,31]. Early identification of nutritional risk allows for timely therapeutic interventions, such as nutritional therapy, to restore or maintain the nutritional status of patients with HNC, aiming to improve clinical outcomes and quality of life. CC facilitates early detection of risk and nutritional status and has shown good performance as a substitute method to predict nutritional risk, making it useful when other screening methods are not applicable.

This study has some limitations. Data were obtained from a single reference oncological center, and since this is a cross-sectional study, it was not possible to track future outcomes of the evaluated patients or establish causal relationships. Furthermore, although the number of participants met the estimated value from the sample calculation, the selection was made by adherence rather than probabilistic sampling. Patients with HPV-positive status were not excluded from the sample, which may have influenced the epidemiological profile of the sample.

Our findings complement the current literature and reinforce the importance of rigorous nutritional risk monitoring upon the admission of oncological patients, particularly in the context of HNC, since factors associated with the patient profile are closely linked to nutritional risk.

CONCLUSION

The results of this study highlight the relevance of assessing nutritional risk in patients with HNC, particularly in a context of high prevalence of malnutrition at the time of diagnosis. Factors such as low income and CC are significantly associated with this risk.

In addition to determining the factors associated with nutritional risk, it was found that the correlation and concordance between the NRS-2002 and CC reinforce the utility of CC as an additional method to identify nutritional risk, as a smaller CC is associated with nutritional risk in the evaluated population.

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Resumo

Introdução: o câncer de cabeça e pescoço é uma das neoplasias mais prevalentes, frequentemente associada a fatores como tabagismo e consumo de álcool. A desnutrição é comum entre esses pacientes, com muitos apresentando risco nutricional antes mesmo do tratamento.

Objetivo: o objetivo desse estudo foi identificar os fatores associados ao risco nutricional em pacientes com câncer de cabeça e pescoço.

Método: foram incluídos no estudo pacientes com câncer de cabeça e pescoço de um hospital de referência em tratamento de câncer no Brasil. Aplicou-se um questionário semiestruturado abordando informações socioeconômicas e clínicas, e realizou-se a avaliação antropométrica, triagem de risco nutricional através do Nutritional Risk Screening e rastreio dos sintomas de impacto nutricional pelo questionário "Head and Neck Symptoms Checklist". A regressão logística binária foi utilizada para quantificação da participação das variáveis independentes no desfecho com nível de significância inferior a 5%.

Resultado: dos 132 participantes do estudo, o risco nutricional estava presente em 46,2%. A renda familiar ≤ 2 salários mínimos aumentou em 2,9 vezes as chances de desenvolver risco nutricional (OR = 2,916; IC95% = 1,017-8,359; p = 0,046). Ainda, cada centímetro de aumento no perímetro da panturrilha (PP) reduziu em 24,9% as chances de estar em risco nutricional (OR = 0,751; IC95% = 0,646-0,873; p = <0,001).

Conclusão: os indivíduos com baixa renda possuem maiores chances de risco nutricional, enquanto um maior PP colabora para a redução desse risco, evidenciando esses fatores como determinantes críticos no estado nutricional do paciente com câncer de cabeça e pescoço.

Palavras-chave: triagem; estado nutricional; trato gastrointestinal superior; fatores sociodemográficos.