



HYGIENIC ASSESSMENT OF THE NUTRITIONAL STATUS OF PATIENTS WITH ORAL CANCER

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Article history:	Abstract:
Received: August 11 th 2025 Accepted: September 10 th 2025	According to the assessment of the nutritional status of patients with oral cavity cancer (OCC), the average number of meals per day was 3.5 ± 0.1 . By type of nutrition: 40 patients (85.1%) had natural (oral) feeding, 5 (10.6%) mixed (combined), and 2 (4.2%) enteral feeding. In 40.0% of patients, meat and meat products; in 50.0%, grains and cereals; in 37.0%, vegetables and gourds; in 17.0%, fruits; in 52.0%, legumes; and in 37.0%, milk and dairy products were consumed below physiological norms. The following were consumed above physiological norms: 15.0% confectionery products, 55.0% bread and high-grade flour products, 60.0% fast food and processed products, 20.0% chemically processed products, 12.0% spicy and salty foods, and 17.0% carbonated and colored drinks. This may reduce immune system function and increase the risk of cancer development and complications.

Keywords: Oral cavity cancer (OCC), nutrition, products, consumption.

INTRODUCTION. This study focuses on assessing the nutritional status of patients with oral cavity cancer (OCC) in the context of Uzbekistan and presents local data using internationally recognized methods (BMI, PNI, MNA). The relevance of this research lies in the fact that early nutritional screening can improve patients' quality of life and reduce treatment costs. For example, studies conducted in developing countries have shown that malnutrition doubles the mortality risk among OCC patients [1,4,6,10].

This disease is closely associated with tobacco use, alcohol consumption, and poor dietary habits, and its incidence is steadily increasing in Uzbekistan, especially in densely populated regions such as the Tashkent region. According to 2025 data, the incidence of OCC in Uzbekistan reached 2.0 per 100,000 population, which represents a significant increase from 1.4 in 2016 [2,6].

Nutritional disorders are frequently observed in OCC patients because the disease itself interferes with the eating process—for example, tumors in the oral cavity can cause difficulties in chewing and swallowing. Furthermore, treatment methods such as surgery, radiotherapy, and chemotherapy reduce appetite and make nutrition even more difficult, leading to malnutrition. Malnutrition weakens the immune system, lowers resistance to infections, and worsens treatment outcomes. International studies show that 40–80% of

OCC patients suffer from malnutrition, which significantly reduces survival rates [3,7,8].

Research on OCC in Uzbekistan is highly relevant since regional factors, such as traditional dietary patterns (high consumption of carbohydrates and fatty foods), can additionally affect nutritional status. For example, harmful habits such as tobacco and nasvay use are observed in 20–30% of the Uzbek population, increasing the risk of developing OCC [4]. The nutritional condition and food supply of patients with oral cavity cancer are evaluated according to sanitary rules and norms (SanPiN 0105-01, SanPiN 0007-20). Nutritional adequacy is assessed using standardized tables and calculation methods [6,8,10].

Enteral and parenteral nutrition strategies, especially during chemotherapy and radiotherapy, help reduce toxicity. The involvement of dietitians in nutritional management improves the effectiveness of treatment outcomes. The study emphasizes that adequate intake of proteins and micronutrients contributes to strengthening the immune system. This approach highlights the clinical importance of nutritional support in OCC patients. Moreover, regular monitoring of nutritional status throughout the treatment process is considered crucial [1,5,9].

This study focuses on assessing the nutritional status of OCC patients in Uzbekistan using international standard methods (BMI, PNI, MNA). Early nutritional screening can improve patients' quality of life and



reduce treatment costs. Studies in developing countries show that malnutrition doubles the mortality risk among OCC patients[1,4,6,10].

This disease is strongly associated with smoking, alcohol use, and poor dietary habits, and is increasing in Uzbekistan, particularly in densely populated regions such as Tashkent. By 2025, the incidence of OCC in Uzbekistan reached 2.0 per 100,000 population, compared with 1.4 in 2016[2,6].

Nutritional status impairment is common in OCC because tumors in the oral cavity cause difficulty chewing and swallowing. Treatment methods (surgery, radiotherapy, chemotherapy) also reduce appetite, causing malnutrition that weakens immunity and worsens treatment outcomes. International studies show that 40–80% of OCC patients experience malnutrition, reducing survival rates [3,7,8].

Uzbekistan-specific studies are crucial since regional dietary habits (high carbohydrate and fat intake) influence nutritional status. Harmful habits like smoking and tobacco chewing affect 20–30% of the population, raising OCC risk. Patient diets are assessed according to sanitary standards (SanPiN 0105-01, SanPiN 0007-20). Nutritional adequacy is calculated based on standard tables [6,8,10].

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of nutritional status throughout the treatment process is considered crucial [1,5,9].

RESEARCH OBJECTIVE. To assess the nutritional status, body condition, and body mass index (BMI) of patients with oral cavity cancer.

MATERIALS AND METHODS. The study was conducted at the Tashkent Regional Branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology. Data from 47 patients diagnosed with oral cavity cancer were analyzed.

Anthropometric assessment: Indicators determining the patients' body condition (height, body weight, BMI) were analyzed.

Nutritional status screening analysis: The number of daily meals (3, 4, or 5 times per day), types of nutrition (natural/oral, enteral via tube, and combined), and the nutritional and biological values of the daily diet were analyzed.

Statistical analysis: The results obtained in the study were analyzed statistically using Python software (pandas, numpy, scipy) to calculate mean values (\pm standard deviation) and Pearson correlation coefficients.

RESULTS AND DISCUSSION. The average body weight of the patients included in the study was 61.5 ± 4.2 kg, and the BMI indicator was 21.8 ± 2.3 . It was found that most of the patients had underweight conditions, while the remaining patients had normal body weight indicators.

The analysis of the number of daily meals among the patients is presented in Figure 1.

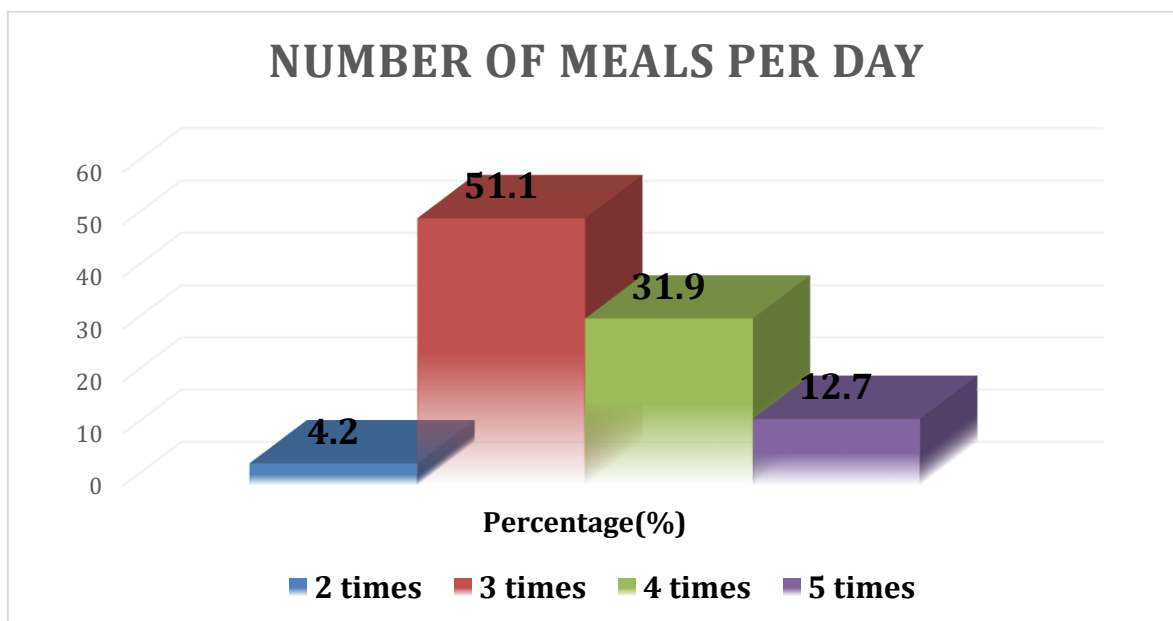


Figure 1. Distribution of patients by number of meals per day.

Based on the data presented in Figure 1, 2 individuals (4.26%) had two meals per day, 24 individuals (51.1%) had three meals per day, 15 individuals (31.9%) had four meals per day, and 6 individuals (12.7%) had five meals per day (the average number of meals per day was 3.5 ± 0.1).

According to the analysis of the types of nutrition among patients diagnosed with oral cavity

cancer, out of 47 patients, 40 (85.1%) were fed naturally, 5 (10.6%) had mixed (combined) feeding, and 2 (4.2%) were fed enterally

The consumption level of food products in the daily diet of patients diagnosed with oral cavity cancer is presented in Table 1.

Table 1.
The consumption level of food products in the daily diet of patient

Products consumed below physiological norms		n	%
1	Meat and meat products	16	40.0
2	Grains and cereals	20	50.0
3	Vegetables and melons	15	37.0
4	Fruits	7	17.0
5	Legumes	21	52.0
6	Milk and dairy products	15	37.0
Products consumed above physiological norms		n	%
1	Confectionery products	6	15.0
2	Bread and flour products	22	55.0
3	Fast food and processed foods	24	60.0
4	Chemically processed foods	8	20.0
5	Spicy and salty foods	5	12.0
6	Carbonated and colored drinks	7	17.0

According to the data presented in Table 1, it was found that the consumption level of the following food products was below the physiological norm among the patients: meat and meat products in 40.0% of

patients, grains and cereals in 50.0%, vegetables and melons in 37.0%, fruits in 17.0%, legumes in 52.0%, and milk and dairy products in 37.0%.



It was also revealed that the following food products were consumed above the physiological norm: confectionery products in 15.0% of patients, bread and premium flour products in 55.0%, fast food and processed foods in 60.0%, chemically processed foods in 20.0%, spicy and salty foods in 12.0%, and carbonated and colored drinks in 17.0% of patients.

CONCLUSION. The inconsistency of the consumption level of food products in the daily diet of patients diagnosed with oral cavity cancer with the established physiological norms poses a risk for disease progression and affects the quality of life. A deficiency of essential food products in the daily diet may lead to a weakened immune system and an increased risk of cancer development. In such cases, regular assessment of the patients' nutritional status and the development of an individualized dietary plan can help reduce the risk of the disease.

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