



Policy Brief: The Necessity of Managing Oral Complications in the Treatment of Head and Neck Cancers

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Received: 16 September, 2025; Revised: 18 October, 2025; Accepted: 20 October, 2025

Keywords: Radiotherapy, Oral Mucositis, Dry Mouth, Head and Neck Cancer, Multidisciplinary Care

Head and neck cancers (HNCs), ranking as the sixth most common cancers globally with approximately 650,000 new cases annually and being highly prevalent in Iran, include malignancies of the oral cavity, oropharynx, larynx, salivary glands, and sinuses (1, 2). These cancers significantly impair quality of life, with studies showing notable deficits in physical, emotional, and social domains (2). The treatments for these cancers, while effective, often cause severe oral complications, such as mucositis and xerostomia, which further impair patients' quality of life (3-5). International estimates suggest that in the coming decades globally, one in two individuals may develop some form of cancer in their lifetime (1). Among the most common types is HNC, including malignancies of the oral cavity, oropharynx, larynx, salivary glands, and sinuses. Given the essential functions of these organs in swallowing, speech, and nutrition, these cancers significantly impair patients' quality of life, often more than other malignancies, due to their impact on essential functions like swallowing and speech (1, 2, 6). The HNC, ranking as the sixth most common cancers globally (2) and being highly prevalent in Iran. Common treatments such as radiotherapy and chemotherapy, especially when administered concurrently, often result in significant oral adverse effects such as mucositis and xerostomia (dry mouth) (3-5, 7). These complications impact nutritional intake, speech, and treatment adherence, necessitating urgent policy attention. This study evaluated an educational-care intervention, demonstrating a 40% reduction in

severe mucositis (grade 3 - 4) through interdisciplinary collaboration involving dentists. Findings highlight the need for integrated oral care protocols in HNC treatment to enhance patient outcomes and quality of life.

Recent research on miRNA mechanisms in gastric cancer highlights their potential as biomarkers for managing treatment-related complications in various cancers, including HNC (8). These complications directly impact quality of life, nutritional intake, speech, and treatment adherence, and thus demand the serious attention of health policymakers. Despite the need for comprehensive care, a gap often exists in integrating dental professionals into HNC treatment teams, necessitating novel interdisciplinary approaches (9). This brief addresses a critical gap in national cancer care policies by providing evidence for integrating oral care protocols to mitigate treatment-related complications. The present study, using a team-based approach and an educational-care intervention, focuses on reducing the severity of oral mucositis and highlights the importance of interdisciplinary collaboration, particularly with the inclusion of dentists.

Main Challenge: Oral Complications from Cancer Treatment

Standard treatments like radiotherapy and chemotherapy, especially in the oral region, frequently lead to:

- Mucositis: Painful inflammation and ulceration of the oral mucosa, which can be so severe that it causes

treatment interruption and threatens patient survival (3,10).

- Xerostomia: A long-lasting side effect of radiotherapy often persisting for the rest of the patient's life with no definitive cure available (11, 12). Reports indicate that 40% to 70% of patients with HNC experience some degree of mucositis or dry mouth during treatment (13, 14). Emerging research on cancer treatment toxicities, such as nanoparticle-induced cellular damage in other cancers, further underscores the need to address complications like mucositis and xerostomia (15). If left unmanaged, these complications may lead to malnutrition and weight loss, secondary infections, speech impairment, depression, and ultimately a reduced quality of life (10, 16).

Proposed Intervention: Team-Based Education and Care

A quasi-experimental study conducted at Zahedan University of Medical Sciences (2022) involving 60 patients with stage II-IV HNC undergoing radiotherapy demonstrated that implementing a structured educational-care program led by nurses in collaboration with dentists significantly reduced the severity of mucositis (5). The severity of mucositis was assessed using the WHO Mucositis Scale, showing a 40% reduction in severe mucositis (grade 3 - 4). The intervention included:

- Educating patients on oral care before, during, and after radiotherapy
- Dental assessment and treatment of decayed teeth before starting therapy
- Providing patients with appropriate oral hygiene tools such as soft toothbrushes, dental floss, and suitable toothpaste
- Regular oral evaluations by a dentist during treatment
- Developing and distributing a simple and practical educational booklet

This approach was based on close cooperation between nurses, physicians, and dentists, and its effectiveness in reducing mucositis severity was effectively shown (7, 9).

Key Takeaways for Policymakers

1. Develop preventive and management protocols for oral complications, especially mucositis and xerostomia, in the treatment plans of HNC patients
2. Design and implement educational programs for nurses and patients in oncology centers, focusing on oral care and early detection of symptoms
3. Require dentist involvement in the initial evaluation of HNC patients before starting radiotherapy

to prevent serious complications like osteoradionecrosis of the jaw

4. Promote interdisciplinary collaboration in treating HNC s and define a clear role for dentists in the care team

5. Develop tools for ongoing assessment and monitoring of patients' oral health, both subjective and objective, to support better clinical decision-making

Policy Recommendations

As outlined in Table 1, the following actions are recommended across multiple domains.

Table 1. Policy Recommendations for Managing Oral Complications in Head and Neck Cancer Treatment

Domains	Recommended Action
Treatment structure	Integrating dentists into oncology care teams at cancer treatment centers
Education	Design and distribution of multimedia educational packages for patients and their families
Prevention	Performance of dental checkups and treat decayed teeth before starting cancer therapy
Care	Regular monitoring and documentation of oral complications in patient clinical records
Research	Multi-center studies support for investigating solutions for xerostomia management

Conclusions

Due to the location of HNCs and the nature of treatment, patients are particularly vulnerable to specific complications like mucositis and xerostomia, which deserve particular focus in health policy planning. Findings from this study show that an educational-care intervention focused on oral care and including dentist participation can effectively reduce mucositis severity. Since xerostomia is a chronic and resistant complication, continued research and development of new therapies are essential. Ultimately, effective management of treatment complications in HNCs depends on institutionalizing a multidisciplinary and team-based approach in national health policy and clinical practice.

Acknowledgements

We gratefully acknowledge the Knowledge Translation Unit of Zahedan University of Medical Sciences for their substantial collaboration and support.

Footnotes

Authors' Contribution: Study concept, design, study supervision, and administrative, technical, and material support: F. K.; Acquisition of data, statistical analysis,

analysis, and interpretation of data: A. S.; Drafting of the manuscript and critical revision of the manuscript for important intellectual content: B. M.

Conflict of Interests Statement: The authors declare no conflict of interests.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication.

Ethical Approval: This study was approved by the Ethics Committee of Zahedan University of Medical Sciences (ZAUMS; [IR.ZAUMS.REC.1401.397](https://doi.org/10.1002/cncr.33587)).

Funding/Support: This study was supported by a grant (No. 10858) for a master's thesis in medical-surgical nursing at Zahedan University of Medical Sciences.

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