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Nutrition Support for Patients with Head and Neck Cancer: A Workshop Model for Dysphagia Diet Awareness

Yuka I. Sumita[1,2*], Ayako Hagino[3], Mai Murase[2], Mahmoud E. Elbashti[2,4], Mihoko Haraguchi[2], Mariko Hattori[2], Noriyuki Wakabayashi[2]

[1]Department of Partial and Complete Denture, School of Life Dentistry at Tokyo, The Nippon Dental University, Tokyo, Japan
[2]Department of Advanced Prosthodontics, Graduate School of Medical and Dental Sciences, Institute of Science Tokyo, Tokyo, Japan
[3]Ohagi Home-Care Dental Clinic, Tokyo, Japan
[4]Faculty of Dentistry, University of Zawia, Zawia, Libya
Email: *sumita@tky.ndu.ac.jp

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Abstract

Purpose: In super-aging societies, prosthodontists will have a growing role and will need to improve their nutrition knowledge. This study aimed to evaluate the effectiveness of a workshop-based model for increasing dysphagia diet awareness among prosthodontists working with head and neck cancer patients. **Methods:** The study had a post-intervention design and included 10 maxillofacial prosthetic educators from eight countries who participated in a 120-minute workshop focused on theoretical and practical training in nutrition support for patients with dysphagia. Sessions were held in a specialized restaurant in Tokyo and included lectures, observation of Japanese cooking techniques, hands-on preparation of dysphagia-friendly foods, and cross-cultural comparisons. Knowledge, confidence, and practical application were assessed using a post-workshop questionnaire. Descriptive statistics and thematic analysis were used to evaluate outcomes. **Results:** Seven of the 10 prosthodontists completed the post-intervention questionnaire. All respondents reported overall satisfaction with the workshop. Session content was regarded as easy to understand by 57.14%, appropriate by 28.57%, and easy by 14.29%. Most respondents (85.71%) were "very satisfied" with the instructors' explanations, and 100% were "very satisfied" with the workshop's length and structure; 71.42% felt they could apply the knowledge in clinical practice, while 28.58% anticipated challenges. The respondents appreciated the workshop's focus on dysphagia, particularly in elderly patients, and valued the insights into Japanese dysphagia diets and culture. **Conclusions:** Workshops on nutrition provide an interactive platform for prosthodontists to enhance their

knowledge and improve comprehensive patient care, highlighting the importance for prosthodontists to stay updated on developments in nutrition, particularly in dysphagia.

Keywords

Dysphagia Diet Awareness, Head and Neck Cancer, Nutrition Support, Dental Professionals, Workshop Model

1. Introduction

In Japan, addressing frailty among the elderly has become an urgent priority as the country is faced with a super-aging society [1]. It is necessary to prevent the onset of age-related diseases and the need for long-term care while extending healthy life expectancy [2]. Maintaining or restoring the ability to eat by use of prosthetic devices is a core component of the professional responsibilities of prosthodontists. However, in the early stages of oral frailty or the advanced stages of long-term care, some patients may not fully recover their ability to eat even after prosthetic treatment. This challenge is also seen in patients who have undergone head and neck tumor resection [3]. The growing elderly population, many experiencing oral frailty, underscores the crucial role of prosthodontists in preserving both oral function and overall health through proper nutrition. Oral frailty can cause malnutrition and physical decline. Without sufficient nutrition knowledge, prosthodontists may prioritize mechanical restoration over dietary needs, leading to ineffective prosthetic solutions that fail to support adequate food intake.

In 2024, the Japan Prosthodontic Society entered into a collaborative agreement with the Japanese Society for Parenteral and Enteral Nutrition Therapy. This partnership is based on the belief that prosthodontists should focus on prosthetic treatment and actively provide nutritional guidance and management, including advice on meal content and preparation methods (to determine food texture) and ensure comprehensive care. The role of the prosthodontist is increasing in parallel with societal aging, and there is a need to improve their knowledge about nutrition. The nutritional needs of patients with head and neck cancer (HNC) should be considered in the same way as in very elderly patients. Patients with HNC present unique oncological challenges in view of the anatomical structures in the head and neck and the significant impact of surgery on the patient's ability to eat, drink, and speak [4]-[6]. Treatment of HNC often involves a combination of surgery, radiation, and chemotherapy, which, despite being effective for tumor treatment, frequently results in complications, particularly dysphagia [7]. Dysphagia is a well-recognized side effect of treatment for HNC, affecting a large percentage of patients and significantly impairing their nutritional intake, quality of life, and overall prognosis [7] [8]. Therefore, ensuring appropriate nutritional support for these patients is an important component of cancer care.

Dysphagia-related malnutrition can lead to weight loss, a weakened immune

response, and increased susceptibility to infection, all of which negatively impact recovery and survival outcomes [9] [10]. However, awareness of dysphagia and its management using tailored diets is often inadequate among healthcare professionals [11]. The lack of standardized education and training programs for management of dysphagia, particularly nutrition, can result in suboptimal care for patients with HNC [12]. In this context, promoting effective nutrition strategies through focused educational interventions is essential for improving patient outcomes and healthcare delivery.

Dietary modifications for HNC patients with dysphagia require a multidisciplinary approach involving prosthodontists, speech pathologists, dietitians, oncologists, and nursing staff. Specific dysphagia diets, including texture-modified foods and thickened liquids, are important for maintaining adequate nutritional intake while minimizing the risk of aspiration [13] [14]. However, the complexity of implementing these dietary changes demands heightened awareness and practical skills among dentists and prosthodontists, who must be equipped to recognize dysphagia early and implement appropriate interventions. Several organizations, including the National Comprehensive Cancer Network, European Society for Clinical Nutrition and Metabolism, and American Society for Parenteral and Enteral Nutrition, have published nutritional guidelines that offer useful recommendations for nutritional management to support treatment, prevent infections, and enhance recovery in patients with HNC.

Workshops as learning models provide an ideal platform for enhancing dysphagia diet awareness and training dentists and prosthodontists in the specific nutritional needs of patients with HNC [15]. Workshops that include interactive sessions and hands-on learning can foster interdisciplinary collaboration and empower medical teams with the knowledge and tools to implement effective management of dysphagia. These programs not only improve healthcare providers' understanding of the challenges faced by patients with HNC but also offer practical solutions that can be integrated into routine clinical practice.

This study evaluated the effectiveness of a workshop-based model for increasing dysphagia diet awareness among maxillofacial prosthetic educators working with patients who have HNC. More specifically, it aimed to enhance understanding of the dietary needs of patients with HNC, develop practical skills for creating and managing swallowing-friendly diets, and share knowledge regarding the availability of food suitable for inclusion in a dysphagia diet in various countries. The null hypothesis was that a structured workshop would significantly enhance participants' knowledge of nutrition support and dysphagia management for improving patient care outcomes.

2. Materials and Methods

2.1. Study Design

This study used a post-intervention design to evaluate the impact of a workshop-based model on dysphagia diet awareness among dentists and prosthodontists

managing patients with HNC. The workshop was designed to provide both theoretical and practical training on nutritional support for HNC patients with dysphagia, with the primary focus on identifying dysphagia, implementing a diet suitable for patients with dysphagia, and optimizing nutritional interventions. The participants' knowledge, confidence, and competence in managing a diet for dysphagia were assessed after the workshop.

2.2. Study Participants

The study included dental professionals, such as dentists and prosthodontists, who were actively involved in the care of patients with HNC across eight international dental institutions. To ensure a diverse yet relevant sample, participants were recruited based on specific inclusion and exclusion criteria. Eligible professionals were required to have a minimum of six months of experience working with HNC patients and a commitment to attending all workshop sessions. Those without direct patient care responsibilities or with extensive prior training in dysphagia management were excluded to maintain the study's focus. A total of 10 maxillofacial prosthetic educators were ultimately enrolled. Informed consent was obtained from all participants before conducting the workshop. This selection approach aimed to minimize potential biases and ensure the transparency and applicability of the study findings.

2.3. Workshop Intervention Structure

The intervention was a 120-min, in-person workshop designed to address gaps in dysphagia diet awareness and improve the participant's ability to provide nutritional support for patients with HNC. The workshop was held at Jinzamomi, a Japanese restaurant in Tokyo, Japan, that has expertise in the preparation of food suitable for patients with HNC. The owner of the restaurant is a maxillofacial prosthodontist. The workshop comprised two main sessions. The first session consisted of a lecture on maxillofacial prosthetics that was delivered by an experienced instructor who focused on nutrition in patients with HNC, explained dysphagia, and outlined the challenges potentially facing many dentists and prosthodontists. In the next step, participants observed a Japanese chef preparing a meal using a traditional Japanese cooking technique known as "hidden knife" (**Figure 1**). This technique entails inserting multiple micro knife cuts into sashimi, which can be easily chopped and eaten without becoming lodged in the throat. This technique is widely used in Japanese cuisine and not specifically for preparation of food suitable for patients with dysphagia.

The second session provided an introduction to various commercially available foods suitable for inclusion in a dysphagia diet, and a sample menu that allows patients to order dishes containing these foods was shared with the participants. Next, the participants prepared and tested various commercialized dysphagia diet foods, including texture-modified foods and thickened liquids (**Figure 2**). Commercialized dysphagia products are common in Japan because of societal aging.

The participants then sampled dysphagia diet food prepared by a chef using traditional Japanese techniques (Figure 3 and Figure 4). The hands-on experience of cooking and eating was beneficial for learning cooking methods for dysphagia diets. This experience also allowed the participants to compare the differences between a regular diet and a dysphagia diet, noting the taste and appearance. In the final part of the workshop, each participant presented dysphagia diet foods from their respective countries of origin, and the food and culture of these countries were compared (Figure 5).

Figure 1. Study participants observe a chef preparing a meal using a Japanese cooking technique called "hidden knife."

Figure 2. Introduction of various commercially available dysphagia diet foods using a menu designed to allow patients to order these foods. Study participants prepared and tested various commercialized dysphagia diet foods, including texture-modified foods and thickened liquids.

Figure 3. Study participants practiced preparation of some dysphagia diet foods with a chef using traditional Japanese techniques.

Figure 4. Study participants sampled dysphagia diet foods prepared by a chef using traditional Japanese techniques.

Figure 5. Study participants presented dysphagia diet foods from their countries of origin to allow comparison of foods from different cultures.

2.4. Data Collection and Outcome Measures

Data were collected immediately after the workshop using a post-intervention questionnaire, which all participants were asked to complete. The participants were also asked to provide feedback on the quality and content of the workshop

and on its perceived impact on their clinical practice. The primary outcome measure was the change in participants' knowledge about dietary and nutritional support for HNC patients with dysphagia, as measured by the post-intervention questionnaire. Secondary outcome measures included changes in self-reported confidence in managing dysphagia, practical application of skills learned in the workshop, and participant feedback regarding the workshop's effectiveness.

Descriptive statistics were used to summarize the participants' demographics and baseline characteristics. Qualitative data from the feedback and follow-up assessments were examined using thematic analysis to identify common themes and insights regarding the workshop's impact on clinical practice.

3. Results

Seven of the 10 participating dentists and prosthodontists completed the post-intervention questionnaire, giving a response rate of 70%. All respondents reported overall satisfaction with the workshop; 57.14% found the material easy to understand, 28.57% considered it appropriate, and 14.29% described it as very easy to understand. In terms of instructor performance, 85.71% of the respondents reported that they were "very satisfied" with the explanations provided by the instructors, while 14.29% reported being "satisfied." All respondents were "very satisfied" with the length and structure of the workshop sessions. When asked whether the knowledge gained from the workshop could be applied in their clinical practice, 71.42% of respondents responded positively, and 28.58% believed they could apply the information albeit with some challenges. A total of 57.14% indicated that they could implement the techniques learned in their country of origin, and 42.86% stated they could do so but with certain challenges. Participants provided additional feedback in the free comments section. One respondent noted that they were "very impressed with the concern shown about diets in elderly patients and those with dysphagia." Another described the workshop as "interesting," stating that they "learned a lot about the Japanese dysphagia diet and Japanese food and culture." A third respondent commented, "very informative workshop...full consideration of the patient." These results demonstrate a high level of satisfaction with the workshop, with most respondents feeling confident in their ability to apply the knowledge acquired, despite some anticipating minor challenges in clinical practice.

4. Discussion

This study evaluated the effectiveness of a workshop-based model for increasing dysphagia diet awareness among maxillofacial prosthetic educators working with patients who have HNC. This workshop-based model was effective for increasing awareness of a dysphagia diet among participants. All respondents to a questionnaire were very satisfied with the length and structure of the workshop sessions, and 71.42% responded that the knowledge gained from the workshop could be applied in their clinical practice. Therefore, the null hypothesis was rejected.

The role of prosthodontists is expanding in response to increasingly aging societies, highlighting a growing need for better knowledge about nutrition. For patients with maxillofacial defects caused by HNC, selection and delivery of an appropriate prosthetic device is essential. It is also important to consider food holistically to improve eating habits. Sharing food information with patients and their families can increase patients' quality of life and requires dentists and prosthodontists to have relevant knowledge and keep updated on nutrition. Workshops can be a good option for dental professionals to learn about nutrition. Such workshops are important because of the significant swallowing difficulties experienced by many patients with HNC. These difficulties can severely impact their ability to maintain adequate nutrition, which in turn affects their overall quality of life [16]. Furthermore, incorrect management of swallowing problems can lead to serious complications, including malnutrition and aspiration pneumonia [17]. Our workshop featured a series of presentations and hands-on training sessions as well as interactive discussions. Participants had the opportunity to delve into real-world applications of the nutrition guidelines, ensuring that they could translate theoretical knowledge into effective patient care.

Japanese cuisine is renowned for its emphasis on fresh, high-quality ingredients and its dedication to preserving the natural flavors of each component. Various cooking techniques, such as grilling, simmering, and raw preparations like sushi and sashimi, are commonly used. Furthermore, traditional Japanese cuisine focuses on presentation and aesthetics, with meticulous attention paid to the visual appeal of every dish. A defining feature of traditional Japanese cuisine is its emphasis on seasonality, with ingredients and dishes carefully selected to reflect the changing seasons. "Washoku" refers to traditional Japanese cuisine, encompassing individual dishes and complete meals. In recognition of its cultural significance, Washoku was included on the UNESCO Intangible Cultural Heritage list in 2013.

Preparing Japanese food requires a high level of expertise, particularly in cooking techniques and ingredient selection, and many of these skills can be applied to the preparation of dysphagia-friendly diets. While the most straightforward method to soften food is to use a blender, blending alone often leaves fibers, resulting in a coarse texture. Straining to remove these fibers is essential for achievement of a smoother consistency. What sets the Zinzamomi dysphagia diet apart is that it does not rely on reconstituting blended food but instead adapts traditional Japanese cooking techniques to create safe and easy-to-swallow dishes.

A common misconception is that chopping food into smaller pieces makes it easier to swallow. In reality, individuals with impaired tongue movement, which is often associated with aging, may struggle to gather small pieces of food and direct them to the throat, accumulating food in the oral vestibule. To address this problem, hidden cuts are made in food to help form cohesive clumps, which are easier to swallow than chopped pieces of food. Dysphagia diets aim to train and support swallowing function and must be enjoyable and appetizing. A genuinely

satisfying meal engages all the senses, namely, sight, smell, touch, sound, taste, and temperature. Ultimately, patients want to eat safely and comfortably with family and friends, even when coping with dysphagia.

Although using a maxillofacial prosthesis may provide nutritional support during the perioperative period, almost 50% of patients are at risk of undernutrition [18]-[21]. Yanagi *et al.* [18] evaluated nutrition status in patients who had undergone treatment for HNC using the Mini Nutritional Assessment-Short Form and sought to identify predictors of the nutrition score. They concluded that almost half of their patients were at risk of undernutrition when they were seen for denture treatment, suggesting that longer-term use of the denture may help to maintain nutrition status. In another study, Devi *et al.* [20] evaluated the nutrition status in patients in whom maxillectomy and prosthodontic rehabilitation was planned using three nutritional assessment methods. They found that the nutrition status of these patients worsened after surgery as a result of surgical morbidity and the adverse effects of radiotherapy but improved with post-surgical healing, resolution of the sequelae of radiotherapy, and improved oral function as a result of a well-adapted obturator prosthesis.

Although the workshop model used in this study was designed to increase dysphagia diet awareness among maxillofacial prosthetic educators, it holds significant potential for improving general care in elderly patients, particularly in management of age-related swallowing difficulties. Dysphagia is common in the elderly and can lead to malnutrition, dehydration, and aspiration pneumonia, all of which negatively impact overall health and quality of life [22]. By equipping healthcare professionals with practical knowledge about dysphagia-friendly diets, workshops like this can improve the ability of practitioners to provide comprehensive care. The hands-on training and real-world application of dietary modifications in a workshop such as the one used in this study not only benefit patients with HNC but also have broader relevance for elderly individuals with compromised swallowing functions. Adapting our workshop content for general healthcare providers could further strengthen their ability to address these common issues, contributing to safer and more enjoyable eating experiences for elderly patients.

The primary limitation of this study was its small sample size. Considering that this research was conducted in a single group of international maxillofacial prosthetic educators, it remains uncertain whether similar outcomes would be achieved in broader or more diverse populations. Although the sample size of 10 participants may appear small, it was determined based on the need for in-depth qualitative insights from experienced professionals in maxillofacial prosthetics. Given the specialized nature of the study, selecting a targeted group of experts ensured high-quality, context-rich data. In addition, the sample size aligns with previous qualitative research methodologies, where smaller participant groups allow for comprehensive analysis of specialized topics without diluting the depth of individual contributions. However, replicating this study with a larger sample size

would deepen our understanding of the impact of our workshop model. A larger cohort would also provide clearer insights into whether the educational objectives were fully met and whether the intervention effectively addressed the identified knowledge gaps. Future directions for this workshop model involve expanding the target audience to include not only maxillofacial prosthodontists but also maxillofacial surgeons, head and neck oncologists, and nurses specializing in care of patients with HNC. In addition, incorporating pre-intervention data collection and comparative analysis would provide a strong evaluation of the workshop's educational impact, allowing for a clearer assessment of participant knowledge and skills before and after the training. Future research could benefit from this approach to enhance the validity of findings and further substantiate the workshop's effectiveness. Furthermore, implementing objective outcome measures, such as standardized assessments or clinical simulations, would allow for a more precise evaluation of the knowledge and skills acquired during the workshop. This approach could offer deeper insights into its impact on clinical practice, ensuring a more rigorous and quantifiable assessment of educational outcomes. In addition, conducting a long-term follow-up would be beneficial to assess knowledge retention and the practical application of workshop content, offering insights into the sustainability and long-term impact of the educational intervention. Piloting the workshop with general dentists could further enhance its applicability by broadening the participant pool and evaluating its effectiveness across a more diverse audience. This expansion would not only provide a clearer assessment of learning outcomes but also contribute to a more comprehensive understanding of the long-term sustainability of the acquired skills and knowledge.

5. Conclusion

Dentists and prosthodontists play an important role in caring for patients with HNC by maintaining oral health, providing prosthetic solutions, and supporting nutritional management. Given the complex needs of these patients, dental professionals need to stay informed about the latest developments in nutrition, particularly as it relates to dysphagia and other treatment-related challenges. Regularly updating this knowledge is critical to ensuring appropriate care. Workshops offer an effective and interactive platform for dental professionals to enhance their understanding of nutrition and its integration into patient care, ultimately improving patient outcomes.

Informed Consent

Informed consent was obtained from all study participants before the workshop.

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Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Cabinet Office Government of Japan (2022) Annual Report on the Ageing Society [Summary] FY2022. https://www8.cao.go.jp/kourei/english/annualreport/2022/pdf/2022.pdf

[2] Nakatani, H. (2019) Population Aging in Japan: Policy Transformation, Sustainable Development Goals, Universal Health Coverage, and Social Determinates of Health. *Global Health & Medicine*, **1**, 3-10. https://doi.org/10.35772/ghm.2019.01011

[3] Yanagi, A., Sumita, Y., Hattori, M., Kamiyanagi, A., Otomaru, T., Kanazaki, A., *et al.* (2018) Clinical Survey Over the Past 35 Years at the Clinic for Maxillofacial Prosthetics Tokyo Medical and Dental University. *Journal of Prosthodontic Research,* **62**, 309-312. https://doi.org/10.1016/j.jpor.2017.12.002

[4] Amaral, M.N., Faísca, P., Ferreira, H.A., Gaspar, M.M. and Reis, C.P. (2022) Current Insights and Progress in the Clinical Management of Head and Neck Cancer. *Cancers*, **14**, Article 6079. https://doi.org/10.3390/cancers14246079

[5] Petrovic, I., Rosen, E.B., Matros, E., Huryn, J.M. and Shah, J.P. (2018) Oral Rehabilitation of the Cancer Patient: A Formidable Challenge. *Journal of Surgical Oncology*, **117**, 1729-1735. https://doi.org/10.1002/jso.25075

[6] Tani, H, Sumita, Y.I., Murase, M. and Ino, S. (2021) Factors Affecting Resting Energy Expenditure in Patients Treated for Head and Neck Cancer in the Perioperative Period. *Maxillofacial Prosthetics*, **44**, 29-36.

[7] Payne, M. and Morley, J.E. (2018) Dysphagia, Dementia and Frailty. *The Journal of Nutrition, Health and Aging*, **22**, 562-565. https://doi.org/10.1007/s12603-018-1033-5

[8] Ravasco, P., Monteiro-Grillo, I., Marques, Vidal. P. and Camilo, M.E. (2005) Impact of Nutrition on Outcome: A prospective Randomized Controlled Trial in Patients with Head and Neck Cancer Undergoing Radiotherapy. *Head & Neck*, **27**, 659-668. https://doi.org/10.1002/hed.20221

[9] de Sire, A., Ferrillo, M., Lippi, L., Agostini, F., de Sire, R., Ferrara, P.E., *et al.* (2022) Sarcopenic Dysphagia, Malnutrition, and Oral Frailty in Elderly: A Comprehensive Review. *Nutrients*, **14**, Article 982. https://doi.org/10.3390/nu14050982

[10] Javorszky, S.M., Palli, C., Domkar, S. and Iglseder, B. (2024) Combined Systematic Screening for Malnutrition and Dysphagia in Hospitalized Older Adults: A Scoping Review. *BMC Geriatrics*, **24**, Article 445. https://doi.org/10.1186/s12877-024-05070-6

[11] Mushero, N., Demers, L.B. and Chippendale, R. (2022) An Interactive Workshop on

Managing Dysphagia in Older Adults with Dementia. *MedEdPORTAL*, **18**, Article 11223. https://doi.org/10.15766/mep_2374-8265.11223

[12] Wu, X.S., Miles, A. and Braakhuis, A. (2022) The Effectiveness of International Dysphagia Diet Standardization Initiative-Tailored Interventions on Staff Knowledge and Texture-Modified Diet Compliance in Aged Care Facilities: A Pre-Post Study. *Current Developments in Nutrition*, **6**, nzac032. https://doi.org/10.1093/cdn/nzac032

[13] Robbins, J., Nicosia, M., Hind, J.A., Gill, G.D., Blanco, R. and Logemann, J. (2002) Defining Physical Properties of Fluids for dysphagia Evaluation and Treatment. *Perspectives on Swallowing and Swallowing Disorders* (*Dysphagia*), **11**, 16-19. https://doi.org/10.1044/sasd11.2.16

[14] Garcia, J.M., Chambers IV, E. and Molander, M. (2005) Thickened Liquids: Practice Patterns of Speech-Language Pathologists. *American Journal of Speech-Language Pathology*, **14**, 4-13. https://doi.org/10.1044/1058-0360(2005/003)

[15] Reisdorph, N., Stearman, R., Kechris, K., Phang, T.L., Reisdorph, R., Prenni, J., *et al.* (2013) Hands-on Workshops as an Effective Means of Learning Advanced Technologies Including Genomics, Proteomics and Bioinformatics. *Genomics Proteomics Bioinformatics*, **11**, 368-377. https://doi.org/10.1016/j.gpb.2013.10.002

[16] Krisciunas, G.P., Castellano, K., McCulloch, T.M., Lazarus, C.L., Pauloski, B.R., Meyer, T.K., *et al.* (2017) Impact of Compliance on Dysphagia Rehabilitation in Head and Neck Cancer Patients: Results from a Multi-Center Clinical Trial. *Dysphagia*, **32**, 327-336. https://doi.org/10.1007/s00455-016-9760-4

[17] Sandmæl, J.A., Sand, K., Bye, A., Solheim, T.S., Oldervoll, L. and Helvik, A.-S. (2019) Nutritional Experiences in Head and Neck Cancer Patients. *European Journal of Cancer Care*, **28**, e13168. https://doi.org/10.1111/ecc.13168

[18] Yanagi, A., Murase, M., Sumita, Y.I. and Taniguchi, H. (2017) Investigation of Nutritional Status Using the Mini Nutritional Assessment-Short Form and Analysis of the Relevant Factors in Patients with Head and Neck Tumour. *Gerodontology*, **34**, 227-231. https://doi.org/10.1111/ger.12253

[19] Murase, M., Tani, H., Sumita, Y.I., Ino, S. and Taniguchi, H. (2022) Nutritional Assessment in a Maxillectomy Patient from the Preoperative Period to Definitive Obturator Insertion: A Case Report. *Journal of Prosthodontic Research*, **66**, 514-518. https://doi.org/10.2186/jpr.JPR_D_20_00250

[20] Devi, E.M., Gupta, C., Kochhar, K.P., Koli, D.K., Nanda, A. and Jain, V. (2022) A Long-Term Nutritional Assessment of Maxillary Cancer Patients Undergoing Prosthodontic Rehabilitation after Surgery: A Longitudinal Study. *Journal of Oral Biology and Craniofacial Research*, **12**, 702-708. https://doi.org/10.1016/j.jobcr.2022.08.017

[21] Murase, M., Tani, H., Ino, S. and Sumita, Y.I. (2020) Nutrition Assessment of an Elderly Patient with Recurrent Advanced Carcinoma of the Maxilla: A Case Report. *International Journal of Maxillofacial Prosthetics*, **3**, 28-31. https://doi.org/10.26629/ijmp.2020.06

[22] Sura, L., Madhavan, A., Carnaby, G. and Crary, M.A. (2012) Dysphagia in the Elderly: Management and Nutritional Considerations. *Clinical Interventions in Aging*, **7**, 287-298. https://doi.org/10.2147/CIA.S23404