

EMPOWERMENT AND INCREASING SELF-AWARENESS OF XEROSTOMIA AS AN ORAL COMPLICATION OF HEAD AND NECK CANCER THERAPY IN CANCER PATIENTS AT THE INDONESIAN CANCER FOUNDATION, EAST JAVA CHAPTER COORDINATOR

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Abstract

This community service project aimed to increase the knowledge and awareness of cancer survivors, particularly those with head and neck cancer, regarding oral complications, especially dry mouth or xerostomia, which often result from radiation and chemotherapy. Data indicates that the prevalence of xerostomia is very high in patients undergoing radiation treatment. To address this issue, the project implemented the Self Oral Screening (SOS) method, a self-screening program that includes filling out questionnaires and examining the oral cavity. The activity also trained participants to create a mouthwash using baking soda. The educational session was conducted at the Indonesian Cancer Foundation in Surabaya, attended by 14 cancer patients and their companions. Evaluation was carried out using a pre-test and post-test to measure the increase in participants' knowledge before and after the education. The average pre-test score was 70.0, while the average post-test score increased to 83.57, showing a significant increase in the participants' knowledge level. However, the evaluation data is still being processed for further publication. Overall, this activity successfully improved participants' knowledge, which is expected to enhance their quality of life through better self-care.

Keywords: Head and Neck Cancer, Xerostomia, Dry Mouth, Self Oral Screening (SOS), Community Service

INTRODUCTION

Head and neck cancer is a malignancy that includes the larynx, pharynx, oral cavity, and nose. The World Health Organization (WHO) reports that the global incidence of cancer is increasing annually and remains a major worldwide health problem. The high number of cancer patients contributes to increased morbidity and mortality and significantly impacts their quality

of life. In Indonesia, the incidence of oral cancer is 5,329 cases out of a total of 18,071, ranking it sixth in Southeast Asia.^{1,2}

Cancer management in Indonesia generally involves surgical procedures, radiotherapy, and chemotherapy. Radiotherapy and chemotherapy are the most frequently used interventions. Side effects from these therapies can cause impaired oral function and integrity, which can lead to a reduced quality of life, an increased risk of infection, treatment delays or failure, and higher hospitalization costs. Some common oral side effects include oral mucositis, xerostomia (dry mouth), oropharyngeal candidiasis, radiation-related caries, and osteoradionecrosis.^{3,4,5} Hyposalivation and the sensation of dry mouth (xerostomia) are among the most common adverse effects in patients undergoing head and neck cancer treatment. The prevalence of xerostomia is very high during radiation therapy (93%) and remains high more than two years post-radiation (85%).^{6,7,8}

IMPLEMENTATION METHOD

This community service project was based on a Letter of Agreement for Partnership in a Community Partnership Program (PKM), signed on December 8, 2024, by the Head of the Indonesian Cancer Foundation / Yayasan Kanker Indonesia (YKI), East Java Coordinator Branch, and the Head of the PKM Proposing Team from the Faculty of Dentistry at Universitas Airlangga. The purpose was to apply science and technology by providing education to cancer survivors.

The implementation method began with providing a pre-test to participants, followed by an educational session led by a resident from the Oral Medicine postgraduate program (PPDGS IPM) on xerostomia as a side effect of cancer therapy. Participants also received an informative booklet titled "Dry Mouth". After the presentation, a demonstration on how to make a simple mouthwash from baking soda was conducted. The event continued with an interactive question-and-answer session between the participants and the speaker. To measure the effectiveness of the education, participants were asked to complete a post-test with the same 10 questions as the pre-test. Data from both the pre-test and post-test were collected and will be analyzed to evaluate the participants' knowledge level before and after the educational session. The activity also involved a collaboration with YKI, which helped coordinate with at least 14 patients and their companions to participate in the event.

RESULTS AND DISCUSSION

This community empowerment activity took place on Wednesday, July 30, 2025, at the Indonesian Cancer Foundation / Yayasan Kanker Indonesia (YKI) East Java Coordinator Branch at Jalan Mulyorejo Indah I No. 8, Surabaya, from 3:30 PM to 5:30 PM WIB. A total of 14 cancer patients and their companions participated in the event. The implementation process began with a pre-test consisting of 10 questions to be completed in 10 minutes. The average pre-test score for the 14 participants was 70.0. After the educational session and the demonstration on how to make a baking soda mouthwash, participants were asked to complete a post-test with the same 10 questions. The average post-test score increased to 83.57, indicating a rise in the participants' knowledge.

Two weeks after the event, the team conducted a follow-up evaluation by asking the same post-test questions. During this visit, only 5 of the patients were still at the YKI, and out of that number, only 2 had tried making the homemade mouthwash. All evaluated patients stated that the community service activity was very beneficial and met their needs, and they hoped that similar events could be held regularly.

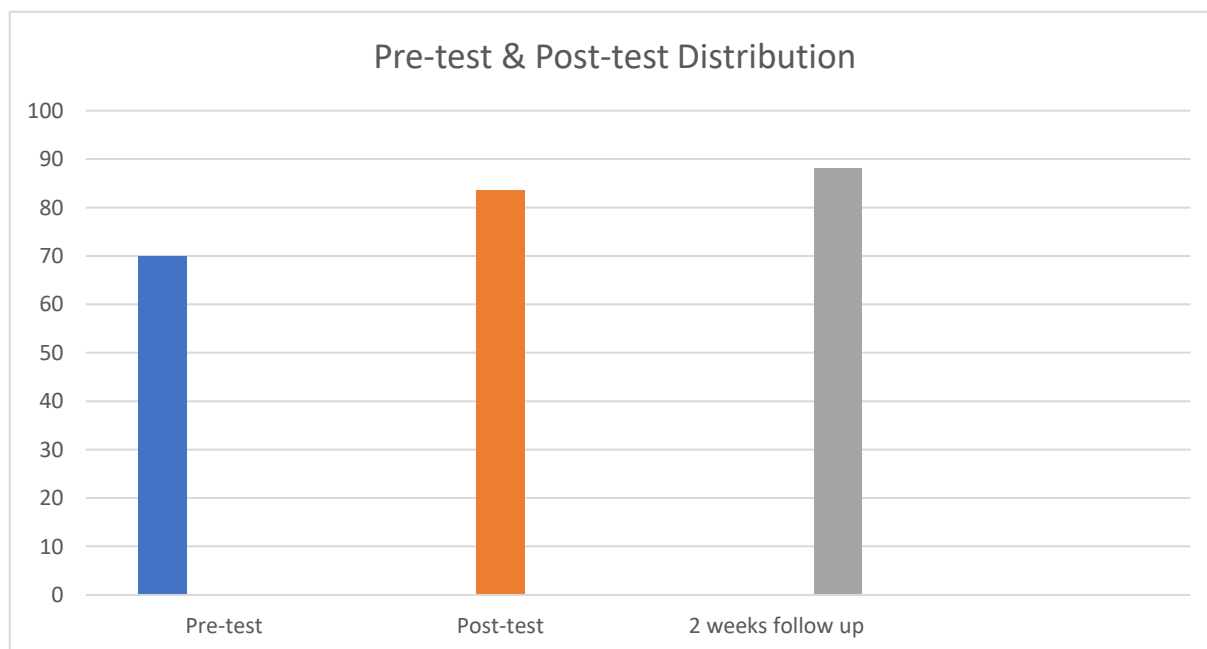


Figure 1. Pre-test and post-test distribution graphics

The results of the pre-test and post-test show a significant increase in knowledge among the participants. The improvement in the average score from 70.0 to 83.57 demonstrates that the educational methods used, including presentations, the distribution of booklets, and demonstrations, were effective in enhancing participants' understanding of xerostomia as an oral complication of cancer therapy. However, several challenges were encountered. One limitation was the low follow-up rate. Two weeks after the event, only 5 out of the 14 patients could be re-evaluated, and only 2 of them had actually practiced making the homemade mouthwash. This highlights the challenge of ensuring the sustained application of the knowledge that was provided. Overall, the activity succeeded in meeting its goal of increasing knowledge, but continuous monitoring and communication with the partner are needed to ensure a broader and more lasting impact.



Figure 2. The speaker provided an explanation of xerostomia as an effect of radiotherapy and chemotherapy on the oral cavity and gave training on how to make a mouthwash from baking soda



Figure 3. Documentation of the counselling team along with the cancer patients

This project adopts two primary strategies that are innovative and focused on patient empowerment. These are Self Oral Screening (SOS) and Independent Mouthwash Preparation. Both methods were chosen for their practical and economical nature, and because they can be easily integrated into patients' daily routines.

SOS is a simple method where patients are taught to routinely examine the condition of their own mouths. This process involves visual and tactile inspection of the entire oral cavity, including the lips, tongue, inner cheeks, palate, and gums. Patients are equipped with an educational module containing illustrated guides and a list of warning signs and symptoms, such as lesions, ulcerations (canker sores), discoloration, and swelling. The main goal of SOS is to identify problems as early as possible so that medical treatment can be administered quickly, preventing the condition from worsening. This approach not only increases patient awareness but also fosters a sense of proactive responsibility for their own health.^{8,9}

Many patients cannot afford commercial mouthwash products, which are often expensive or not always available. This project overcomes that barrier by teaching patients how to make

a simple and effective mouthwash solution from easily accessible ingredients, such as warm salt water or a baking soda mixture. This base mouthwash is proven to have antimicrobial and anti-inflammatory properties that can help maintain oral hygiene and relieve the symptoms of mild mucositis. Practical training sessions (workshops) allow patients to prepare their own mouthwash under expert guidance. This approach provides a practical and sustainable solution while also increasing patients' self-sufficiency in their own care.^{10,11}

CONCLUSION

The conclusion of this community service project is that the educational intervention on preventing and managing oral complications from cancer therapy, specifically xerostomia, successfully increased participants' knowledge. This is evidenced by the increase in the average post-test score (83.57) compared to the pre-test score (70.0). This improvement is expected to help cancer patients better maintain their oral mucosal hygiene and health through the Self Oral Screening (SOS) method and the use of homemade mouthwash. However, there are challenges that need to be addressed, particularly regarding the sustained application of the knowledge by patients. The low follow-up rate suggests the need for continuous monitoring and communication with the Indonesian Cancer Foundation. Overall, the activity was deemed highly beneficial and relevant to the needs of the patients.

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