

Living Beyond the Battle: Quality of Life Among Oral Cancer Survivors

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Abstract

Cancers are one of the most devastating groups of human pathologies, presenting the versatile range of hallmark clinical features and leading to millions of deaths each year around the globe. Even with the latest advancements in oral cancer treatment, patients continue to grapple with adverse effects across physical, emotional and social aspects of their lives. Modern medicine has not been directed only towards the cure and survival of the patients but also their well-being; yet, chronic conditions like oral cancer can significantly affect one's quality of life. Evaluating quality of life should serve as a measure of the success of multidisciplinary treatment, pinpointing areas where the individual requires additional support. Health related quality of life (HRQoL) serves as a subjective assessment of health status, often assessed through generic or disease-specific questionnaires, offering valuable insights into multiple aspects of patients' lives. Similarly, oral health-related quality of life (OHRQoL) is determined by individuals' perceptions of how their oral health influences their overall quality of life. Recognizing the diverse characteristics of oral cancer patients and the various treatments they undergo, the results of OHRQoL assessments post-treatment for oral cancer patients seem to present some inconsistency and complexity in the literature. The knowledge regarding OHRQOL in these patients may provide the level and the most essential time period of support they need from the healthcare professionals. Further, it provides the success of the involvement of multidisciplinary healthcare team. Hence, this narrative review highlights the various domains of quality of life among oral cancer survivors.

Keywords: Cancer Survivors, Oral Cancer, Oral Health Related Quality Of Life, Quality Of Life

Introduction

Oral cancer remains a major public health concern across both developed and developing nations. Globally, its incidence ranges from 1 to 10 cases per 100,000 individuals in most regions. Ranked as the 13th most prevalent cancer worldwide, oral cancer accounted for 377,713 new cases and 177,757 deaths in 2020.^[1] It is a critical global health issue, as it ranks among the top 10 cancers in terms of incidence. Despite advancements in research and management, survival rates have shown minimal improvement in recent years, posing an ongoing challenge for biomedical science.^[2]

The American joint committee of cancer (AJCC) has divided the oral cavity into seven distinct anatomic

locations which includes lip, tongue, floor of mouth, hard palate, alveolar, retromolar trigone and soft palate from which primary cancers develop.^[3] The initial diagnosis of oral cancer is done at the clinical examination. However, histopathology findings, radiographic correlations, sentinel node biopsy helps the clinician to know the extent and staging of the tumors for definitive treatment planning. Being asymptomatic is one of the major threats for oral cancer patients as they go unnoticed in stage I and II. Most of the cancers diagnosed at the clinical examinations are stage III and IV lesions which requires palliative care.^[4]

In the preamble of its constitution, the World Health Organization (WHO) states “Health is a state of complete physical, mental and social well - being and not merely the absence of disease and infirmity.”^[5] Advancements in the definition and measurement of health have had minimal influence on dentistry. The dental field has largely maintained a clinical focus, associating oral health primarily with the presence or absence of disease. This is the reason why dentistry has remained immune to this broadening concept of health. It is essential to recognize that quality of life (QOL) measures are not a replacement for assessing disease-related outcomes but serve as an adjunct to them.^[6]

WHO defines QoL as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.^[7] The concept of quality of life is applicable across all clinical settings and holds particular significance in certain medical fields, such as hospice and palliative care. In these areas, the focus shifts from pursuing aggressive curative treatments to prioritizing patient goals and enhancing their quality of life.^[8] Health-Related Quality of Life (HRQoL) and Oral Health-Related Quality of Life (OHRQoL) are two key components of overall quality of life.

Interactive Model For HRQOL Among Oral Cancer Survivors

An interactive model for Health-Related Quality of Life (HRQoL) emphasizes that the primary aim of healthcare is to maintain or enhance the quality of life throughout the lifespan of an oral cancer survivor. This model comprises elements such as impairments, physical, psychological, and social functioning, health perceptions, and access to healthcare. These components are essential for clinical researchers to understand the impact of a patient's disease, condition, or injury on their quality of life.^[9]

Oral Health Related Quality Of Life

Oral health is a part of general health and it is affected by oral diseases that have specific impacts on patients, and these impacts are represented by the concept oral health-related quality of life (OHRQoL). It is recognized by the WHO as an important segment of the Global Oral Health Program.^[9] OHRQoL is an individual's assessment of how the functional factors, psychological factors, social factors and experiences of pain/discomfort in relation to oro-facial concerns affect ones well-being.^[9]

Assessment of OHRQoL allows for a shift from traditional medical/dental criteria to assessment and care that focus on a person's social and emotional experience and physical functioning in defining appropriate treatment goals and outcomes. The concept of OHRQoL brings a new perspective to clinical care and research. It shifts the attention of clinicians and researchers from solely focusing on the oral cavity to considering the patient as a whole. OHRQoL can make an invaluable contribution to the clinical practice of dentistry, dental research, and dental education. OHRQoL concerns are central to basic sciences research, clinical studies, and behavioral/community-oriented research.^[9] Assessing OHRQoL among this group provides a holistic view of a patient's well-being beyond clinical outcomes,

ensuring that care addresses all aspects of a patient's life affected by oral cancer.

Domains of Quality Of Life Among Oral Cancer Survivors

The different domains of quality of life among oral cancer survivors and its components are summarized in table 1.

Table 1. Domains And Components Of QoL Among Oral Cancer Patients

DOMAINS	COMPONENTS
Physical functioning	<ul style="list-style-type: none"> • Mastication • Dysphagia • Shoulder morbidity • Difficulty in speech • Appearance
Socio-emotional health component	<ul style="list-style-type: none"> • Mood • Anxiety • Activity of the patient • Social interactions
Physical pain	<ul style="list-style-type: none"> • Type – Acute/chronic • Severity • Functional limitation due to pain
Functional limitation	<ul style="list-style-type: none"> • Functional impairment • Loss of function
Psychological discomfort	<ul style="list-style-type: none"> • Self esteem • Psychological distress • Depression
Handicap	<ul style="list-style-type: none"> • Handicap
Other domains	<ul style="list-style-type: none"> • Sexuality, intimacy and relationships • Coping

Physical Functioning

Physical support needs extracted from various studies were the symptoms and physiological functioning difficulties expressed by oral cancer survivors that could be improved by access to tailored professional support, for example to allied health disciplines for issues related to oral health and rehabilitation, nutrition, eating problems, dysphagia, difficulties in speech or shoulder morbidity.^[10] Physical functioning seems to be the most severely affected domain of QoL among oral cancer patients.^[11] Physical functioning scores could be improved in these subjects following different treatment strategies like surgery, radiotherapy or chemotherapy along the course of the disease.^[12-14] Among the various physical functioning components, the worst assessed component was related to appearance, while the speech component showed better scores.^[11] One of the important and neglected consequences of oral cancer is malnutrition which has a negative effect on the morbidity and mortality of the patients.^[15] This could be attributed to dysphagia among oral cancer patients. Eating difficulties have been reported as one of the major complaints of oral cancer subjects affecting their quality of lives.^[16]

Limitations in active range of motion (AROM) of neck and shoulder are highly prevalent in patients with oral cancer.^[17] Shoulder morbidity is defined as shoulder AROM and patient-reported shoulder pain and limitations in daily life, where they obtain the AROM of abduction, forward flexion, and external rotation of the shoulder. Moore et al reported that shoulder morbidity was found to be associated with poorer physical and social functioning 1 year post-treatment and was also associated with depression.^[10]

Socio-Emotional Health Components

This component relates to activity of participants, recreation, self-esteem, social interactions, mood and anxiety.^[11] Within the socio-emotional health, the mood component is found to have the worst score, whereas the shoulder component has the least problem.^[11] These components seem to improve significantly following surgery when compared to pre-treatment levels.^[18] This could be attributed mainly to the patient's coping strategies, but perhaps a more pertinent factor is the strength of family support.^[19] Family and social support play a crucial role in determining how well a survivor copes with these challenges. Strong support systems can provide emotional reassurance and practical assistance, helping individuals regain confidence and adapt to their new circumstances. Conversely, lack of support can exacerbate feelings of isolation and helplessness, leading to a higher degree of psychological distress. The worse the evaluation results of one's physical or socio-emotional health, the higher degree of depression.^[11]

Physical Pain

Oral cancer pain is an ever-present public health concern. Most oral cancer patients experience uncontrollable pain that creates a poor quality of life and limits normal function. For oral cancer patients, pain is rated as the worst symptom, and impairs a patient's speech, swallowing, eating, drinking, and interpersonal relations.^[20] Subjects with oral cancer reported a greater prevalence of physical pain.^[18] Although pain is the primary symptom, it typically appears only after the lesions have grown significantly, prompting the patient to seek medical attention. As a result, early-stage carcinomas often go undetected due to their asymptomatic nature. In more advanced and larger lesions, symptoms can range from mild discomfort to intense pain, particularly affecting the tongue.^[21] Wide local excision of the tongue with selective neck dissection was found to improve the pain scores among those with tongue cancer when compared to pre-treatment levels.^[18]

Functional Limitation

Functional limitation is a significant domain affecting one's quality of life.^[22] Functional limitation is considered to be more severe if management includes radiotherapy and chemotherapy along with surgery, rather than surgery alone.^[22] In terms of functional limitations, the floor of the mouth lesion shows the worst condition, the reasons of which include the complexity of the surgical access site (enclosed by the lower jaw and tongue), operative complications, and then functional complications.^[22] Surgical interventions, particularly for tumors in complex areas like the floor of the mouth, can result in significant functional deficits due to the intricate anatomical structures involved, including the tongue and lower jaw.^[23] The surgical excision may compromise speech and swallowing functions, while post-operative complications such as scarring and restricted tongue mobility further hinder oral function. When combined with radiotherapy and chemotherapy, the severity of functional limitations increases due to additional side effects such as mucositis, xerostomia (dry mouth), trismus (restricted mouth

opening), and loss of taste, all of which contribute to difficulty in food intake, speech articulation, and overall oral comfort.^[23]

Psychological Discomfort

The prevalence of psychological discomfort among oral cancer survivors range from 25-41%.^[24-27] Untreated psychological distress can result in low compliance with medical care, slow recovery from illness, reduction in the quality of life, poor adjustment to life after cancer treatment, high likelihood of tumor recurrence, and a low survival rate.^[28] Depression has significant implications for the patient with oral cancer as depressed patients are less likely to complete the prescribed treatment plan; more likely to have longer hospital stays and less ability for self-care after treatment, influencing mortality and morbidity.^[10] Oral cancer patients of all age groups and of both the sexes were found to be affected emotionally. The psychological burden of dealing with a serious condition, coupled with concerns about body image, self-esteem, and future uncertainty, can heighten anxiety and depressive feelings. Additionally, social isolation resulting from decreased participation in social and recreational activities can lead to loneliness and a diminished sense of purpose, further worsening depression. Hence, psychological counseling for the patients and family members should be a part of the comprehensive treatment plan.^[29]

Handicap

As a result of disability, the person experiences certain disadvantages in life and is not able to discharge the obligations and play the role expected of him in the society. This is termed “handicap”, and refers to a disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfillment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual.^[5] Subjects with oral cancer experience significant handicaps in their daily lives compared to healthy controls, facing challenges in speaking, eating, and maintaining social interactions due to the effects of the disease and its treatment.^[16,22]

Other Domains

This includes components like sexuality, intimacy, relationships and coping strategies used by oral cancer survivors to combat the disease and improve their quality of life. Oral cancer survivors report of substantial issues with sexuality and intimacy after cancer treatment.^[10] Studies on stability of marital relationships after cancer treatment and its effect on QoL have shown that the overall QoL was associated with high levels of marital satisfaction.^[30] Oral cancer survivors show a wide range of coping strategies used by them; behavioural escape–avoidance and cognitive escape–avoidance comprised 20% and 14% of the total coping strategies, respectively. There is also an association between poor coping style and functional impairment after treatment.^[10]

Palliative Care for Oral Cancer Survivors

Palliative radiotherapy is now widely recognized as a standard approach for managing symptoms across various parts of the human body. Numerous clinical studies have already established its effectiveness in treating locally advanced head and neck carcinoma. In clinical practice, curative anti-cancer treatments are often provided to patients with advanced malignancies in the hope of achieving maximum local

control and potential cure. However, a considerable number of patients discontinue treatment or fail to comply with the lengthy treatment schedules.^[31]

Ways To Improve QOL Among Oral Cancer Survivors

Many oral cancer patients are long-term survivors, and their long-term QoL depends on addressing the chronic side effects of treatment. This includes managing dry mouth, difficulty in eating, and dental complications that can persist for years. Long-term monitoring of QoL ensures ongoing management and support for better survivorship outcomes. By understanding the specific aspects of oral health that most affect a patient's quality of life, oral healthcare providers can tailor care plans to address those issues more effectively. OHRQoL data can highlight the need for additional rehabilitation services, such as speech therapy, dietary counseling, psychological support, or prosthetic rehabilitation, which are essential for improving life quality after treatment for conditions like oral cancer. The cancer center should have an in-house psychiatrist or clinical psychologist to manage emotional instabilities in these patients. Meeting the psychological needs of these patients will help them undergo the treatment with confidence and follow the protocols meticulously, which will definitely increase the treatment outcomes and prognosis.

As survival rates for oral cancer improve, understanding and improving OHRQoL becomes essential for long-term care strategies. Public health initiatives can then focus on supporting survivors in their rehabilitation and integration back into society, ensuring they lead fulfilling lives post-treatment. Insights into how oral cancer affects quality of life can be used to design behavioral interventions aimed at reducing risk behaviors in populations, thereby preventing the incidence of oral cancer and improving public health outcomes. Improving OHRQoL can reduce the economic burden on both individuals and healthcare systems. By preventing complications and improving outcomes, there can be substantial savings in healthcare costs and a reduction in lost productivity due to illness and disability.

Conclusion

While survival remains a priority, it is equally important to address the physical, emotional and social challenges these patients face. Medical interventions aim to treat cancer and prolong the life, whereas attention to QOL aspects is critical for enhancing the patient's overall well-being. A comprehensive care approach that includes physical rehabilitation, emotional support, oral rehabilitation, and social integration is essential to improve outcomes across all these dimensions. Understanding and addressing these aspects can lead to better patient-centered care and improved recovery and adaptation for oral cancer survivors.

References

- 1 World Health Organization. Comprehensive assessment of evidence on oral cancer prevention released. 2023. Available at <https://www.who.int/news/item/> (Last accessed: 29-11-2024)
- 2 Rivera C. Essentials of oral cancer. *Int J Clin Exp Pathol*. 2015;8(9):11884-94
- 3 American Joint Committee on Cancer. *AJCC Cancer Staging Manual*. 7th Ed. Springer. 2010.
- 4 Mahalingam M, Thiruneelakandan S, Annamalai T, Pavithran VK. Quality of health assessment in oral cancer patients postoperatively – A retrospective study. *Advances in Oral and Maxillofacial Surgery*. 2022;5:100202
- 5 Park K. *Park's Textbook of Preventive and Social Medicine*. 27th ed. Bhanot Publishers. 2023

- 6 Higginson IJ, Carr AJ. Measuring quality of life: Using quality of life measures in the clinical setting. *BMJ* 2001;322:1297-300
- 7 World Health Organization. WHOQOL: Measuring the quality of life. 2012. Available at: <https://www.who.int/tools/whoqol> (Last assessed: 05/05/2024)
- 8 Teoli D, Bharadwaj A. Quality of Life. *Stat Pearls* 2023. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK536962/> (Last accessed: 25/04/2024)
- 9 Inglehart MR, Bagramian RA. Oral Health-Related Quality of Life. Illinois: Quintessence Publishing Co. Inc. 2002
- 10 Moore KA, Ford PJ, Farah CS. Support needs and quality of life in oral cancer: a systematic review. *International Journal of Dental Hygiene*. 2014;12(1):36-47
- 11 Dzebo S, Mahmutovic J, Erkocevic H. Quality of life of patients with oral cavity cancer. *Mater Sociomed*. 2017;29(1):30-34.
- 12 Verdonck-de Leeuw IM, Buffart LM, Heymans MW, Rietveld DH, Doornaert P, de Bree R et al. The course of health-related quality of life in head and neck cancer patients treated with chemoradiation: a prospective cohort study. *Radiother Oncol*. 2014;110(3):422-8
- 13 DC Laraway, R Lakshmiah, D Lowe, B Roe, SN Rogers. Quality of life in older people with oral cancer. *Br J Oral Maxillofac Surg*. 2012;50(8):715-20
- 14 Rogers NS, Lowe D. Health-related quality of life after oral cancer treatment: 10-year outcomes. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2020;130(2):144-9
- 15 Barrios R, Tsakos G, García-Medina B, Martínez-Lara I, Bravo M. Oral health-related quality of life and malnutrition in patients treated for oral cancer. *Support Care Cancer*. 2014;22(11):2927-33
- 16 Barrios R, Bravo M, Gil-Montoya J, Martínez-Lara I, García-Medina B, Tsakos G. Oral and general health-related quality of life in patients treated for oral cancer compared to control group. *Health Qual Life Outcomes*. 2015;13:9
- 17 van Hinte G, Sancak T, Weijs WLJ, Merckx MAW, Leijendekkers RA, Nijhuis-van der et al. Effect of elective neck dissection versus sentinel lymph node biopsy on shoulder morbidity and health-related quality of life in patients with oral cavity cancer: A longitudinal comparative cohort study. *Oral Oncol*. 2021;122:105510
- 18 Agarwal SK, Munjal M, Koul R, Agarwal R. Prospective evaluation of the quality of life of oral tongue cancer patients before and after the treatment. *Ann Palliat Med*. 2014;3(4):238-43
- 19 Doss JG, Ghani WMN, Razak IA, Yang YH, Rogers SN, Zain RB. Changes in health-related quality of life of oral cancer patients treated with curative intent: experience of a developing country. *Int J Oral Maxillofac Surg*. 2017;46(6):687-98
- 20 Viet CT, Schmidt BL. Biologic mechanisms of oral cancer pain and implications for clinical therapy. *J Dent Res*. 2012; 91(5): 447-53.
- 21 Bagan J, Sarrion G, Jimenez Y. Oral cancer: Clinical features. *Oral Oncol*. 2010;46(6):414-7
- 22 Ghorbani Z, Manifar S, Bohloli G, Aghakouchakzadeh A, Mirzaei A. Oral health-related quality of life in patients with oral squamous cell carcinoma: A case-control study. *Dent Res J (Isfahan)*. 2023;20:36
- 23 Kawashita Y, Soutome S, Umeda M, Saito T. Oral management strategies for radiotherapy of head and neck cancer. *Jpn Dent Sci Rev*. 2020;56(1):62-67.

- 24 Krebber AM, Jansen F, Cuijpers P, Leemans CR, Verdonck-de Leeuw IM. Screening for psychological distress in follow-up care to identify head and neck cancer patients with untreated distress. *Supportive Care in Cancer*. 2016;24:2541–8.
- 25 Hassanein KA, Musgrove BT, Bradbury E. Psychological outcome of patients following treatment of oral cancer and its relation with functional status and coping mechanisms. *J Craniomaxillofac Surg*. 2005;33(6):404-9
- 26 Espie CA, Freedlander E, Campsie LM, Soutar DS, Robertson AG. Psychological distress at follow-up after major surgery for intra-oral cancer. *J Psychosom Res*. 1989;33(4):441-8.
- 27 Costanzo ES, Lutgendorf SK, Mattes ML, Trehan S, Robinson CB, Tewfik F et al. Adjusting to life after treatment: distress and quality of life following treatment for breast cancer. *Br J Cancer*. 2007;97(12):1625–31.
- 28 Burgess C, Cornelius V, Love S, Graham J, Richards M, Ramirez A. Depression and anxiety in women with early breast cancer: five year observational cohort study. *BMJ*. 2005;330(7493):702
- 29 Kamat Chinathan P, Kaja N, Muthuraman V, Antharaju Y, Kumar M, Varadharajan U. Psychological analysis of oral cancer patients during pre-operative period in south Indian population: A Prospective, Quantitative, Multicentre Study. *J Clin Diagn Res*. 2016;10(10):72-4.
- 30 Jenewein J, Zwahlen RA, Zwahlen D, Drabe N, Moergeli H, Buchi S. Quality of life and dyadic adjustment in oral cancer patients and their female partners. *Eur J Cancer Care* 2008;17:127–35
- 31 Veluthattil AC, Sudha SP, Kandasamy S, Chakkalakkoombil SV. Effect of Hypofractionated, Palliative Radiotherapy on Quality of Life in Late-Stage Oral Cavity Cancer: A Prospective Clinical Trial. *Indian J Palliat Care*. 2019;25(3):383-90.



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