

## The Association Between Oral Health Related Quality of Life & The Different Treatment Modalities of Oral Cancer-An Update

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### Abstract

QOL is largely affected by lot of overlapping facts and domains. Though enormous health care research is going all over the world to improve the survival as well as improve the quality of life in all the cancers of human body. Human being's individual perception for quality of life is one of the most important parameter to enhance the overall well being of cancer patients. During the last decades, this idea of QOL has developed enormously and so are the various available treatment options in health care research to assess the individual's understanding of well-being.

### 1. Introduction

Oral Health Related Quality of life commonly quoted as QOL is a one of the new invention in the field of health care. Post World War II though revolution took place everywhere but in the field of health care enormous amount of changes were observed. The modern era of health care have emerged not just concerning advanced diagnostic aids but also in context of the various newer treatment regimens options. (K Indrapriyadharshini et al., 2017; Locker D, 1997).

Earlier the thought of being healthy was just focused on being free from disease but as the advancement enhanced newer concepts of well being & being healthy was observed. Even the developed Nations noticed that just being free from the disease is not called as being Healthy.

In 1946 the World Health Organization has spotted a huge transition in the definition of Health stating Health is a state of complete physical mental and social well and not merely the absence of disease and infirmity. Relating this transition with health & oral

health, treatment modalities for chronic disease have put forward a newer concept of feeling of well being and not just curing any disease.

Surgeon's General Report relating to oral health has quoted Quality of Life (QOL) as a new concept has been encapsulated in year 2000. This report noted that the term good health or good oral health doesn't evolve from being free from the disease only rather a way beyond by inculcating the significant importance of social and mental well being as well. The new concept of quality of life has led many researchers to throw light as well as conduct newer research in the field of health care delivery system specially in developed nations. (Zhang H et al., 2013). Locker 1997 has listed this transition from just a disease free approach to a more patient centric Biopsychosocial approach pressing his view point that health and disease should always be viewed as separate independent variables of human experience rather as just end results of one dimension only. This new idea of quality of life encompasses the thought of self-perceived status of wellbeing. (K Indrapriyadharshini et al., 2017).

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Components of Oral Health related quality of life are

1. Functional Component includes mastication and phonetics
2. Psychosocial Component includes aesthetics and thereby self confidence
3. Social Component includes various communication and interactions
4. Clinically noticed discomfort like pain

## 2. Importance of Oral Health Related Quality of Life

The new concept of OHRQOL brings new insight not only in the healthcare delivery systems but also bring new perspectives to research and clinical care specially with chronic debilitating diseases. In OHRQOL, the entire frame work of dental health care personnel shifts from just being focusing the oral cavity to patient's overall well being as one. Optimum oral health no more implies just to have good teeth rather good oral health goes far beyond justifying the capacity of good teeth to do all intra-oral functions like biting, chewing, swallowing & speech. The mere feel of well being gained through good oral health should be well visible in human beings day to day social interactions also. This emerging concept has greatly helped the specialist, clinicians and researchers to pursue the principles of promoting health by motivating the patients to inculcate good oral practices. (Gondivkar et al., April-June 2021).

Various Types of Impact face by oral cancer patients are

### 1. IMPACT ON PHYSICAL STRUCTURES

Oral cancer treatment are associated with varied effects inside and outside oral cavity. The various effects are visualized on facial region, phonetics and reflexes of swallowing. Diminished functions observed in oral cancer are caused by the treatment itself and various regimens leading to adversely affecting the diseased human being. Common Complaints are dysphagia, pain, xerostomia, mucositis and sometimes even associated fibrosis in radiotherapy.

Oral Complaints which are one of the main cause in impairing quality of living among patients of oral

cancer can be present either as effect of the chronic disease or just after the treatment which can remain during entire treatment course or may show modifications.

Self-esteem can be affected when normal facial appearance or communication ability is altered by oral cancer treatment.

### Impact on Aesthetics

Treatment of oral cancer specially those tumours which are localised and are in initial stages usually undergo surgery involving removal of significant larger areas in the face. Appearance of altered face causes socially isolated and eventually leading psychological distress.

With such treatment options palliative care and rehabilitation are often required which includes Reconstructive surgery, various grafts bony or tissue harvested from somewhere else in the body sites so as to replenish affected tissue like buccal mucosa, tongue, maxilla or mandible.

Few instances team of oral maxillofacial surgeon and prosthodontist would be helpful in reducing the after effects of surgery.

### Impact on phonetics

Effect on Phonetics is visible largely post chemotherapy and radio therapy. The impact is between mild to moderate. This impact is caused primarily by treatment in regions of teeth, tongue, lips and palate. oral cancer patients experiences problems while articulating speech and intensity of these symptoms enhances upon presence of clinical complaints like dry mouth or mucositis.

Since the disease cancer has multifaced aetiology and so are the treatment as well their complications. Often a multfigured team is required for treating oral cancer. For correcting phonetics impact, a speech therapist is required to evaluate before, during, and after effects of treatment of cancer.

Main aim always is to revert the patient in highest satisfactory physiological functions in shortest time..

### Impact on Voice

Quality of Voice among patients of oral cancer are greatly affected due to varied factors

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1) vocal fold mobility impairment 2) anatomy of tongue is altered, and 3) chronic edema in laryngeal leading to harshness and strained voice. Xerostomia patients experience such changes in their voice due to laryngeal mucosa dryness. Speech therapist and maxillofacial prosthodontist are an important members for undergoing long term management of these chronic conditions.

## Impact on Swallowing

Dysphagia is one of most common after effects of treatment of oral cancer. It is affected because of difficulty to masticate as result of resection of mandible, extractions, hampered tongue mobility. oral cancer Patients show significant risk by aspirating during eating owing to impact on swallowing. Swallowing can be affected post radiation therapy too.

## IMPACT ON PSYCHOSOCIAL ASPECTS

Oral cancer lead psychosocial effects for patients and family.

Those affected with oral cancer experiences different fears :anxiety of death, loneliness, loss of control. These fears are tackled by defense steps followed during entire disease course .

Treatment of patients with oral cancer involves surgical intervention. This experience, or anticipation of this experience, can provoke emotional trauma and can seem to the patient as a life-or-death threat.

The patient reaction to surgery is complex and fluctuates based on their personality, defense systems, and accumulated fears and traumas.

Face distortion has an important role to categorize surgery as one of the treatment options because of its deleterious effect upon change in physical appearance .Scarring and disfigurement of face are associated with taboos . Such stigma related response such as fear, depression, unwillingness to accept physical damage .

During postoperative phase in treatment patient believes their self body image, facial disconfiguration due to jaw resection force them to be rejected in social personal circles.

Post surgery patient also experiences withdrawal, anxiety, depression, impotency and rage Postoperatively patients often notice a level of

hyperawareness about disfigurement faced by them leading them into facing socially stigma and sometimes they hide in public by wearing scarves and surgical mask so as to avoid attention from others. They experience frustration as they find difficult to accept their own facial appearance as well as face difficulty in communicating. Such situations lead such patients to face bitterness and apathy.

All this eventually lead to social unacceptance and death from which patient withdraw in every form of social interaction. Along with cancer therapy and conventional treatment comprehensive programme of rehabilitation encompassing surgeon, internal medicine, plastic surgeon, prosthodontist, occupational ,psychotherapy and physical therapist would help in balancing the patient's behaviour from reverting from negative after effect related to various cancer treatments. It also engages rebuilding various feeling related in relation from self confidence, self worth , increasing physical capacity and re-establishing disappeared social support and interactions. Some instance it is observed as Group therapy as a very useful tool with others suffering from same issues but still therapy of individuals are always preferred by those who have experienced involvement of face. Taking into considerations of all these pressing issues it becomes all the more important that Psychologist involved should be mandate as part of standard care of patient suffering oral cancer. Along with conventional therapy in order to achieve high level of quality of life sometime Psychiatric medication serve to be soothing for patient during entire difficult course disease. (Jesus Amadeo Valdez et al., 2018)

## ORAL CANCER

Out of all the Head and neck cancers Oral cancer ranks the top most according to prevalence rate seen world wide with around approximately 263,000 new cases every year. Oral Cancer in our country ranks among the 3rd most common cancers with nearly affecting 20 persons/100,000 population . The observation of adverse effects of cancer disease coupled with side effects of the various treatment modalities of oral cancer has largely deteriorated the QOL of oral cancer patients. This is also enhanced two fold due to the proximity of location of oral cancer to vital structures and tissues (Coelho et al., 2012).

## 3. Research Problem

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According to WHO, outcome of health on Quality of life is complex multifactorial largely dependent upon human beings physical state, biological state, psychological state, level of being independent including social interactions & associations affected largely by the environment. The QOL is multidimensional concept which looks at the way the patients feel about themselves in relation to prevailing medical condition. (Gondivkar et al., April–June 2021). There are lot of definitions quoted by various researchers for QOL. WHO defined 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.” Looking upon & taking into considerations for evaluating oral health-related QOL (OHRQOL) it basically denotes the comfort while doing daily activities like chewing, speaking, engaging in day to day household chores and being socially active, self confidence and lastly complete satisfaction relating oral health. (Jesus Amadeo Valdez et al., 2018). Oral cancer patients suffer largely not just because they are often associated to few of vital sites but largely because the basic daily needs is extensively affected by involving the oral cavity & associated structures. There are three main treatment modalities for treating oral cancer as surgery, radio-therapy & chemotherapy OR combination of all. Although the availability of new research & advances for all the treatment modalities involved with oral cancer, this cancer is still associated with huge dysfunctions & disfigurement critically affecting the important domains of life. (Inglehart RF, 1977; Locker D, 1997).

The main essential role of the anatomical parts of oral cavity encompasses very important functions like chewing, swallowing, speaking, taste and salivation. Cancers & thereby the treatment modalities of oral cavity & adjoining structures often results in worst outcomes due to impaired functions ultimately deteriorating the oral health-related quality of life (ORHQoL). Deteriorated & compromised oral health largely affects the overall well-being and health of an individual ultimately negatively affecting the health-related QoL (HRQoL) at larger prospects

Though due to more & more advancement in the treatment modalities & approaches for treating oral cancer, noticeable improvements are visualized in the oral cancer survival rates but still oral cancers at all

sites experiences deteriorated OHQOL. (Shavi GR et al., 2015; Silva MFA et al., 2014).

Various type of treatment regimens for treating oral cancer include -Surgery or combination of surgery and chemotherapy or radiotherapy which is further conjugated by adjunct preventive rehabilitation team. We can give Chemotherapy prior to surgery for reducing the tumour size or post surgery as adjuvant therapy.

Advancement in radio imaging field have emerged a therapy known intensity-modulated radiotherapy (IMRT) for treating oral cancer using more doses of radiation as compared to conventional therapy IRT shows improved regional spread control and sparing healthy oral tissues from radiation effects.

Involvement of local lymph node i.e cervical nodes shows an early significant event in natural history among oropharyngeal cancers. Thus dissection of cervical lymph nodes surgically which are at increased risk of metastasis will be included as part of managing primary tumour.

Couple of studies in the literature show that majority of patients undergoing radiotherapy feels pain in shoulder, droop and reduction in range of motion of shoulders and also shoulder dysfunction.

Managing advanced oral cavity and oropharyngeal cancers is challenging relying upon surgery, chemotherapy and radiotherapy alone or in combination often come with serious side effects.

## SOLUTIONS FOUND

Despite the newer advancements in the conventional treatment approaches for cancers of oral cavity & adjoining structures, the scope, prognosis, cure and QOL among patients of oral cancer remains uncertain. Thus researchers in all the related fields are tirelessly working to improve oral cancer patient’s quality of life. Surgical techniques advancement including microvascular reconstructive techniques have greatly enhanced functional and aesthetic results. Considerable upgradation in radiotherapy techniques e.g computed tomography to notify intensity modulation and target volume delineation employing different computer software have emerged as a transition which has revolutionized older & contemporary techniques of practice of radiotherapy.

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Few of the studies conducted to assess oral cancer patient's quality of life who are undergoing different treatment regimens have shown that surgery alone as a treatment approach always shows better outcomes in terms of OHQOL rather than combined approach of surgery along with adjunct chemotherapy and radiotherapy. Some important physical parameters which were observed to be compromised were Pain and disability among the group undergoing combined approach of surgery along with chemotherapy & radiotherapy. This observation can be justified stating that surgery alone as a treatment option of oral cancer leads to less damage to involved oral tissues & structures rather than the combined approach. Another significant observation was that the combined approach leads to more side effects like xerostomia, mucositis, altered taste, necrosis of bone, reduced mastication & mobility of jaw. Thus these observations greatly throw the light on the fact that while deciding the oral cancer patient's treatment regimens, a multi-centric team of doctors are needed keeping OHQOL as one of the important domains apart from survival rate to finalize the case specific treatment regimen of oral cancer patient. (Shavi et al., 2015; Silva MFA et al., 2014).

## 4. Conclusions Drawn

QOL is largely affected by lot of overlapping facts and domains. Though enormous health care research is going all over the world to improve the survival as well as improve the quality of life in all the cancers of human body. Human being's individual perception for quality of life is one of the most important parameter to enhance the overall well-being of cancer patients. During the last decades, this idea of QOL has developed enormously in health care research to assess the individual's understanding of well-being.

## SCOPE FOR FURTHER RESEARCH

Great scope of health care research is evident in experimenting effects of evaluating the quality of life.

Disappointingly, very few studies have been done till date which compares all treatment approaches of oral cancer keeping survival rate and quality of life as one of the main judgment parameter for finalizing the treatment options. Various approaches of treatment often associated with the oral cancer and other cancers is the leading cause of associated problems which in

turn further hamper the quality of life of individuals. In India, though Oral Cancer ranks among the top 3 cancers according to their prevalence rate, still huge dearth in the availability of literature assessing & evaluating the quality of life post treatment at various time intervals

Thus increase research are to be planned in future not only in India but also in other developing nations so that we can have various choices & critical thinking approach before finalizing the treatment options for case specific oral cancer.

## References

- [1] Bhalla A, Anup N, Bhalla AP, Singh SB, Gupta P, Bhalla S. (2015) Oral health related quality of life (OHRQoL) amongst head and neck cancer patients undergoing chemotherapy and radiotherapy at Sawai Mansingh hospital Jaipur, India. *Scholars Acad J Biosci.* 3:3-12.
- [2] Coelho et al. (2012) Challenges of the oral cancer in India. *Journal of cancer epidemiology*; 1-17.
- [3] Engel GL. (1977) The need for a new medical model: A challenge for Bio-medicine. *Science*; 196:129-136.
- [4] Gondivkar et al., Amol R. Gadail b (April-June 2021)
- [5] Oral and general health-related quality of life in oral squamous cell carcinoma patients-comparative analysis of different treatment regimens *Journal of Oral Biology and Craniofacial Research.* Volume 11, Issue 2, Pages 125-13.
- [6] Inglehart RF. (1977) *The Silent Revolution.* Princeton, NJ: Princeton University Press.
- [7] Inglehart RF. (1990) *Culture Shift.* Princeton, NJ: Princeton University Press.
- [8] Jesus Amadeo Valdez, D. Michael T. Brennan, DDS, MHS, (2018) Impact of Oral Cancer on Quality of Life. *Dent Clin N Am* 62 143-154.
- [9] K Indrapriyadharshini, PD Madankumar, GR Karthikeyan Year : 2017 | Volume : 54 | Issue : 1 | Page : 11-15. *Indian Journal Of cancer.*

# Journal of Coastal Life Medicine

- [10] Oral health-related quality of life in patients treated for oral malignancy at Kanchipuram district, India: A cross-sectional study.
- [11] Locker D. (1997) Concepts of Oral Health,disease&quality of life.ChapelHill:University of North Carolina-Dental Ecology. Page: 11-24.
- [12] Oba et al. (2021) Evaluation of the correlation between side effects to oral mucosa, salivary glands, and general health status with quality of life during intensity-modulated radiotherapy for head and neck cancer.*Supportive Care in Cancer* volume 29, pages127–134.
- [13] Sahney Priya et al (2020) Oral alterations and oral health-related quality of life assessment in patients undergoing chemotherapy at a tertiary care centre. *Spec Care Dentist*. Page :1–7
- [14] Shavi GR, Thakur B, Bhambal A, Jain S, Singh V, Shukla A. (2015) Oral health related quality of life in patients of head and neck cancer attending cancer hospital of Bhopal city, India. *J Int Oral Health*.7:21-7
- [15] Silva MFA, Melo AVG, Barbosa KGN, Pereira JV, Alves PM, Gomes DQC. (2014) Evaluation of oral health status and quality of life of head and neck cancer patients after radiation therapy. *Serbian Dent J*.61:14-20.
- [16] Zhang H, Dziegielewski PT, Biron VL, et al.(2013) Survival outcomes of patients with advanced oral cavity squamous cell carcinoma treated with multimodal therapy: a multi-institutional analysis. *J Otol Head Neck Surg*.42:30–37.