The Impact of Oral Health on the Quality of Life of Patients with Head and Neck Cancer Who Receive Treatment at a Cancer Hospital

Dr. Sarbani Deb Sikdar[1],Dr. Shilpa Jain[2],Dr. Shivani Aggarwal[3],Dr. Ashim Aggarwal[4],Dr. Kriti Sao[5],Dr. Animesh Barodiya[6],

[1]Associate Professor, Department of Oral Medicine and Radiology,GDC, Raipur, Chhattisgarh

[2]Assistant Professor, Department of Oral Medicine and Radiology,GDC Raipur, Chhattisgarh

[3]Professor and HOD, Department of Oral Pathology & Microbiology, Manav Rachna Dental College, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India

[4]Professor and HOD, Department of Oral & Maxillofacial Surgery, Manav Rachna Dental College, Manav Rachna International, Institute of Research and Studies, Faridabad, Haryana, India.

[5]Senior Lecturer, Department of Oral pathology and Microbiology, New Horizon Dental College and Research Institute, Sakri, Bilaspur, Chhattisgarh

[6]Reader, Department of Oral and Maxillofacial Surgery, Guru Gobind Singh College of Dental Sciences and Research Centre, Burhanpur, India

Corresponding author: Dr. Animesh Barodiya, Email: anim4391@gmail.com

Abstract

Background:

To evaluate the patients' oral health-related quality of life (OHRQoL) and identify relationships among QoL, demographic, and illness factors.

Methods:

In the Jawaharlal Nehru Cancer Hospital in India, 153 patients with head and neck cancer were the subject of this cross-sectional study. The survey collected information on demographics and OHRQoL, which was assessed using the head and neck-35 version of the OHRQoL questionnaire developed by the European Organization for Research and Treatment of Cancer. Data about cancer (tumour location, cancer stages, and kind of treatment) were gathered from the patient's hospital records.

Results:

The majority of the 84 population (54.9%) was male (78.4%), and they were mostly in the 41–60 age bracket. The oral cavity was the most typical location for initial tumours (71.3%), and the majority of patients had Stage II and III malignancy. Loss of weight, painkiller use, sticky saliva, restricted mouth opening, and issues with social eating were the main variables influencing QoL. With regard to the type of therapy, there was a significant correlation between pain (P = 0.044), swallowing (P = 0.018), sense (P = 0.001), social eating (P = 0.003), social contact (P = 0.008), and reduced mouth opening (P = 0.008).

Conclusions:

We draw the conclusion that a variety of malignancies significantly decreased the QoL of cancer patients. The dentist can provide counselling for the most appropriate interventions to improve QoL outcomes and the response to treatment with the aid of an assessment of the QoL and symptoms.

Keywords: Head and neck cancer, European Organization for Research for Treatment of Cancer-Head and Neck-35, and quality of life are among of the terms used.

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Introduction

The term "head and neck cancer" (HNC) refers to a group of tumours that develop from the lip, oral cavity, tongue, tonsil, oropharynx, hypopharynx, nasopharynx, nose and para nasal sinus, larynx, parotids, and thyroid.1 In India, HNC accounts for about 30% of all cancers and is a significant disease in terms of incidence and mortality in the country.2 Patients with HNC have Typically, patients' physical, emotional, and social well-being are evaluated, as well as their perceptions of their ability to function in all facets of their lives outside of medical care. Health care, particularly in the area of chronic disorders, has grown to depend increasingly on the assessment of health-related quality of life (HR-QoL). There hasn't been any research done on HNC patients in central India evaluating their oral health-related quality of life (OHRQoL), which is hypothetically more likely to have a negative impact on QoL given that critical functions are impaired by both the disease and its treatment. It has been difficult to figure out how to gauge and put a number on the subjective experience of OHR-QoL. In order to evaluate OHRQoL in HNC patients visiting the cancer treatment centre in Bhopal, central India, a questionnaire-based study was carried out.

Methods

The Cancer Hospital, conducted the study among HNC patients. This descriptive cross-sectional questionnaire survey was conducted. The University's ethics committee and the appropriate representatives of the Cancer Hospital, where the study was carried out, were consulted about the study protocol and given their ethical approval. The sample for the study consisted of all HNC patients who were diagnosed and receiving therapy at the hospital over a period of six months. Between the months of XXXX, the study involved 153 HNC patients. The participants also provided their written consent.By using the purposive sample method, subjects were chosen.

Inclusion standards

The study enrolled patients who were 18 years of age or older, of both sexes, had been diagnosed with HNCs, were undergoing treatment, and were willing to participate.Two pieces of a questionnaire were used to collect the data. Age, gender, marital status, diet, socioeconomic position, and information about cancer, including tobacco use and duration, location and stage of the cancer, length of therapy, kind of treatment, and category of treatment, made up the first section of the report. The second component was an evaluation of the patient's quality of life using the OHRQoL -35 questionnaire, developed by the European Organization for Research and Treatment of Cancer. The patient had to fill out personal information on the questionnaire, and information from the patient's medical records was used to extract illness features, such as location, kind, and tumour staging.

Scoring standards

The OHRQoL 35 module's time period is "within the previous week," and its structure is comparable to that of the core questionnaire. The 35-item tool included domains for pain, swallowing, sense, speaking, social eating, social contact, sexuality, and additional single items that were particular to HNC (e.g., difficulty opening mouth, sticky saliva, dry mouth, etc.). Items HN1 through HN30 are graded using categorical scales with four possible outcomes: "not at all-1," "a little-2," "quite a bit-3," and "very much-4" Items HN31 to HN35 offer response options of "no/yes," "1," or "2." Scales ranging from 0 to 100 are created using the scores.All scales and single-item measures have a score range of 0 to 100 and are transformed linearly by the symptom scale/items using the formula S = RS-1/range*100.A high score on a symptom scale or item scale indicates greater symptomatology or difficulties.

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The HNC-specific HR-QoL questionnaire QLQ-H&N35 consists of 35 questions, 24 of which are component items for the seven domains of pain, swallowing, senses, speech, social eating, social contact, and sexuality. The remaining 11 questions are single items, such as using painkillers and having dental issues. When a patient lacked literacy or was illiterate, the researcher would read the questions out to them on their behalf. This was done to avoid bias and to avoid pressuring the patient to give a particular response. The data were manually input into the computer after collection, and SPSS software version 17 was used to analyse them using Chi-square and ANOVA. The connection between the QoL domains and tumour site, cancer stage, therapeutic method, surgical method, and radiotherapy dose was evaluated using an ANOVA. P 0.05 is regarded as significant, whereas P 0.001 is regarded as extremely significant. The survey was translated into the regional tongue (Hindi). By giving the QoL questionnaire to 20 patients with HNC and calculating Cronbach's alpha, the tool's dependability was determined (reliability coefficient 0.92).

Results

153 patients who had been diagnosed with HNC and were getting treatment made up the study population.. Males made up 78.1%of the cancer patients, constituting the majority of the study group. 54.9% were between the ages of 41 and 60. The bulk of them were married 96.7%, and 34.9% of the individuals belonged to the upper middle class. 62.1% HNC patients chewed tobacco, and 45.1% of them had been doing so for more than 15 years. We categorised the cancerous site into four categories to make analysis easier. The oral cavity, which includes the buccal mucosa, tongue, alveolus, maxilla, mandible, gingivo-buccal sulcus, and pyrifossa, was grouped together. The oropharynx, hypopharynx, and larynx were the final three categories. The bulk of malignancies, 77.12 %, started in the mouth cavity. At the time of the study, 54.2% of the population had Stage II cancer, with the majority of patients—57.6%—getting their diagnosis within six months. Radiation + surgery therapy 25.5% and radiation therapy 24.8% were the two most common forms of treatment. A high mean score indicates a worsening of symptoms. Consequently, the primary problems impacting quality of life (QoL) according to the mean value were weight loss (79.08), use of painkillers (75.82), sticky saliva (72.75), decreased mouth opening (68.17), and difficulties eating in social situations (69.10). According to tumour areas, cancer stage, and kind of treatment approach, the QoL questionnaire scales and individual items were compared. According to Table 1, individuals with little tumours (Stage I+II) performed better than those with large tumours (Stage III+IV). Large tumour (Stage III+IV) patients had the worst results for swallowing (P = 0.00), speech (P = 0.00), social eating (P = 0.00), social contact (P = 0.001), reduced mouth opening (P = 0.00), dry mouth (P = 0.001), cough problem (P = 0.00), feeling unwell (P = 0.00), and use of a feeding tube (P = 0.050).

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Table 1

Comparison of QoL points according to stage of cancer.

EORTC-H&N35	Mean				*P* value
	Stage I *(N=6)*	Stage II 3)	Stage III (N=52)	Stage IV	
Pain	32.23	44.22	54.227	50.33	0.15
Swallowing	39.02	50.20	64.84	87.83	0.00**
Sense	31.47	45.53	52.06	64.08	0.26
Speech	21.57	52.39	71.94	88.00	0.00**
Social eating	39.23	60.51	78.02	90.53	0.00**
Social contact	38.30	46.76	61.81	81.08	0.00**
Sexuality	46.23	40.45	40.33	27.42	0.43
Teeth	15.40	33.23	32.58	25.00	0.69
Reduced mouth	82.60	65.49	81.67	87.02	0.00**
Dry mouth	39.63	51.47	78.48	82.33	0.01*
Sticky saliva	65.47	65.14	78.4.6	90.67	0.05
Cough	21.10	35.27	48.29	87.92	0.00**
Felt III	60.00	51.94	77.46	82.25	0.00*
Painkiller	65.67	72.31	72.08	74.00	0.80
Nutritional	17.67	38.76	50.92	57.33	0.16
Feeding tube	15.67	36.35	42.23	74.00	0.00*
Lost weight	65.67	75.90	82.69	90.67	0.60
Gained weight	51.00	3.43	3.85	0.00	0.01**

Table 2 shows, statistically significant differences for reduced mouth opening in patients with oropharynx cancer (*P* = 0.00).

EORTC-H&N-35	*Mean*				*P* value
	Oral cavity *(N=118)*	Oropharynx (N=2)	Hypopharynx *(N=7)*	Pharynx (N=26)	
Pain	51.16	32	41.43	44.31	0.74
Swallowing	56.79	98	70.14	62.81	0.26
Sense	46.14	100	67.86	50.59	0.08
Speech	58.11	100	80	66.92	0.07
Social eating	71.53	90.40	63.29	61.19	0.42
Social contact	57.36	82.40	48.43	41.23	0.03
Sexuality	41.80	15.40	41.57	32.27	0.48
Teeth	31.74	48	37.14	31.77	0.85
Reduced mouth	73.56	100	80	32.27	0.00**
Dry mouth	62.25	100	70.43	61.23	0.60

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Sticky saliva	72.14	100	80	65.65	0.58
Cough	41.04	50	81.86	51.50	0.04
Felt Ill	63.92	100	65.71	64.56	0.32
Painkiller	74.42	100	56.14	81.77	0.54
Nutritional	42.22	100	43.86	47.15	0.42
Feeding tube	40.53	50	56.14	39.46	0.80
Lost weight	77.81	100	100	72.08	0.45
Gained weight	8.32	0.00	0.00	6.69	0.85

When the QoL scores were compared with the type of treatment, statistically significant difference was found for pain, swallowing, sense, social eating, social contact and reduced mouth opening. The patients who were treated with radiotherapy had better symptoms for social contact, sexuality, teeth problem, cough, use of feeding tube and weight gained.

Discussion

One of the biggest issues in the world is HNCs. It is a serious issue that is developing in a nation like India. The findings of OHR-QoL outcome for oral cancer patients following therapy appear to be somewhat contradictory and also confusing in the literature, despite the relatively diverse nature of HNC patients and therapies experienced. Numerous tiny, fragile structures required for fundamental physiologic function are located in the head and neck region. HNC can have varied degrees of structural antonyms and functional impediments including well-being, self-esteem, and social interactions depending on the tumour size, location, and kind of treatment. Treatment for HNC worsens people's quality of life, which may one day aid in clinical decision-making and the identification of appropriate treatment modalities. As a result, QoL is a crucial criterion for evaluating the efficacy of therapy in this context because it is closely related to the day-to-day care procedures used in health centres.

We discovered that there were four patients for every guy. This is consistent with the results of studies by de Graeff et al., Alicikus et al., and Herce Lopez et al. Hammerlid et al.11 looked at patients with oral, phyryngeal, and lyryngeal cancer and discovered that female patients were more likely (52%) than male patients to have tumours in the oral cavity. However, in the current investigation, males (73.7%) were more likely than females to have an oral cavity tumour.

95 (62.1%) of the HNC patients chewed tobacco; 32 (20.9%) were smokers; 16 (10.5%) were both; and 10 (6.5%) patients had never smoked or chewed tobacco. These findings play a crucial role in the growth of tumours in the head and neck region. Meyer et al.12 discovered a 64% prevalence of cigarette usage among the group of patients they looked at. These conclusions are supported by our findings.In the current study, the most frequently affected site was the buccal mucosa, which was affected in 53 patients (34%), followed by the tongue in 43 patients (28.1%), whereas the mandible was the most commonly affected site in a study by Lam Thang et al.13 (44%). Kim et al.14 studied 133 patients and discovered that 15 patients (11.28%) had soft palate disease, 23 had tongue-base disease, and 89 had tonsillar disease (66.9%).

Radiation alone was the therapy strategy that was used the most (24.8%). This is supported by the findings of Rinkel et al.16 (32%) and Scharloo et al.15 (40.7%). Together with the overall disease stage, the tumor's location and

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its mode of treatment are crucial factors in not only the management of HNC but also the frequency and severity of side effects and QoL.9,17,19

Weight loss, sticky saliva, the usage of painkillers, restricted mouth opening, and difficulties eating with others were the main factors impacting QoL in our study. While Silva et al.20 observed that pain and loss of taste were the main factors affecting quality of life, Psoter et al.18 found that pain, social eating and social contact, and loss of sexuality were the main things affected.In this study, the EORTC head and neck QoL questionnaire was used to assess QoL. According to survey data, oropharyngeal cancer has high symptom points for swallowing, speech, social eating, dry mouth, sticky saliva, taking painkillers, and weight loss, and difficulties opening the mouth was strongly connected with it. The worst results for restricted mouth opening were seen in patients with oropharynx cancer (P = 0.00).

According to Fang et al., patients with Stage IV tumours had lower quality of life than those with Stage I, II, or III tumors.20 These findings are consistent with the findings of the current study.Patients with large tumours, swallowing issues, speech issues, social eating challenges, limited mouth opening, dry mouth, coughing problems, and the sense of being unwell were considerably more common in our investigations. So, Campbell et alinvestigation .'s will also yield a similar conclusion.21 In the current study, discomfort and difficulty swallowing were considerably higher in the radiation group according to QoL data. The group receiving radiotherapy plus surgery had significantly higher sense domain. The majority of the subjects in the current study had mean scores greater than 50, indicating a high level of symptomatology or problem. Surgical methods are intended to completely remove the cancer and to prevent the breathing, swallowing, and voice functions.22–26 In some studies, it was found that surgery increases survival, but physical changes cause difficulty in mouth opening and social contact and negatively affect QoL.25 The 79 patients in this study who were affected by radiation-induced gustatory disturbance lost a significant amount of weight. This could be attributed to a number of factors, including a burning sensation, the development of lesions in various areas of the oral mucosa and pharyngeal tissues, difficulty swallowing, a loss of taste or smell perception, feeling queasy due to radiotherapy or chemotherapy, and psychological issues like depression. With so many factors influencing the patient's self-perception, from their social position to the exact specifics of their diseases, it is difficult to evaluate the quality of life (QoL) of cancer patients. For these reasons, it is a fundamental tool used to assess the impact of the disease and its treatment in order to obtain epidemiological evidence that supports changes to a more effective multi-professional support protocol for the patients. It encompasses individual assessment characteristics, which do not depend on the patient's system of beliefs, values, or even physical strength.7

Conclusion

We draw the conclusion that numerous forms of HNC significantly lowered the QoL of cancer patients. The dentist can provide counselling for the most appropriate interventions to improve QoL outcomes and the response to treatment with the aid of an assessment of the QoL and symptoms. Following an oral cancer diagnosis, it's crucial to make sure the patient has the proper dental care before starting treatment. This will help to minimise any oral side effects from cancer treatment.

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