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Original Research Article

Assessment of Quality of Life in Patients with Head and Neck Cancer Attending the ENT Outpatient Clinic

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Abstract:

Background: Head and neck cancers are a serious health issue in India and represent about 30–40% of all cancers. The cancers impair vital functions such as speech, swallowing, and appearance, leading to impaired quality of life (QoL).

Objective: To assess the QoL of head and neck cancer patients presenting to the ENT outpatient department with the University of Washington Quality of Life (UW-QOL) questionnaire.

Methodology: This Cross-sectional hospital-based analysis was carried out in the ENT department of Santosh Medical College, Ghaziabad, from January 2023 to December 2024. Sixty-four patients who were older than 18 years and had diagnosed head and neck cancers were included. The UW-QOL questionnaire was used to collect data and demographic and clinical data. Descriptive statistics were used to analyze the data.

Results: 79.69% out of 64 were males, and the age group of 50–59 years was the highest (29.69%). The most common reported QoL complaints were pain (57.81%), difficulty in chewing (37.5%), and concern about appearance (37.5%). Swallowing difficulty was found in 31.25% of the patients, and 28.12% of the patients were found to have depression. The most frequent was moderate pain (39.06%). 50% of patients reported normal saliva and neutral sexual satisfaction, and 34.38% had shoulder problems.

Conclusion: Physical and psychological challenges are prevalent in head and neck cancer patients with the most obvious QoL concerns being impairment and pain. Ongoing monitoring of QoL can guide holistic, patient-centered care.

Keywords: Head and neck cancer, quality of life, UW-QOL, pain, swallowing, chewing difficulties.

Introduction

Head and neck cancers are a group of heterogeneous neoplasms of the upper aero-digestive tract, i.e., the oral cavity, nasopharynx, oropharynx, hypopharynx, and larynx [1]. In developed countries such as the United States of America, head and neck cancers constitute about 4% of all the malignancies. However, the scenario is just the opposite in developing countries such as India, where head and neck cancers constitute almost 30–40% of all cancers [2]. The incidence is more among males, who constitute about one-fourth of the cases, and females constitute about one-tenth of the cases. The huge figures in India are mainly attributed to the widespread use of tobacco, areca nut, and alcohol, which are well-established risk factors. These habits along with other socio-environmental and genetic factors have contributed to bestowing head and neck cancers as one of the leading oncological problems in the country.

The etiology of head and neck cancers is multifactorial. Tobacco use is one of the most powerful contributors to this group of cancers, as it contains more than 30 carcinogenic components such as polycyclic aromatic hydrocarbons, and nitrosamines, and it synergizes with alcohol consumption to increase the cancers' carcinogenicity [3,4]. Poor oral hygiene and certain dental structural factors are etiologically relevant and create a conducive environment for carcinogenesis to occur. The presence of oncogenic viruses like human papilloma virus (HPV), herpes simplex virus (HSV), and Epstein–Barr virus (EBV) can increase the chance of developing these cancers. Chronic inflammatory diseases, such as gastroesophageal reflux disease as well as premalignant conditions such as leukoplakia, and erythroplakia, can also present as increased risks. Occupational exposure to carcinogens, including wood dust, organic solvents, and coal dust can place individuals at risk for contracting these particular malignancies. The risk of cancer can also be a result of food consumption patterns, which is linked to increased risk of cancer due to overconsumption of red meat, and salted meats, whereas diets that contain a wealth of fruits, vegetables, antioxidants and vitamins A, C, and E are protective from oncogenesis. Tastes, genetic and immunological susceptibilities can also expose someone to these types of malignancies. Syndromes like Li-Fraumeni, Fanconi's anemia, Bloom syndrome, and ataxia-telangiectasia are marked by increased vulnerability to cancers, in addition to polymorphisms in genes like GST, CYP, and the cytochrome P450 system affecting carcinogen metabolism and DNA repair mechanisms [5,6].

Epidemiological data of the Indian Council for Medical Research (ICMR) Cancer Atlas Project reflect the regional pattern of cancer occurrence in the country. Very high rates are found in the states of Northeastern Assam, Manipur, Mizoram, Tripura, and Nagaland. In these states, 54% of the reported cancers are head and neck cancers. In males, the highest world incidence of lower pharyngeal cancer (11.50/100,000) and tongue cancer (7.60/100,000) is seen in Mizoram and the highest incidence of oral cancer in males (7.80–8.90/100,000) is observed in Pondicherry. Nagaland also registers the highest incidence of nasopharyngeal cancer [7,8],. These findings indicate the need for early detection and targeted prevention in high-risk regions.

Although treatment modalities have significantly improved survival rates among head and neck cancer patients, evaluation and enhancement of patients' quality of life (QoL) remain a challenge. QoL is a crucial measure of outcome in oncology as it expresses the physical, psychological, and social dimensions of a patient's health. The World Health Organization (WHO) defines QoL as the individual's subjective evaluation of their position in life in relation to their value system and culture, and in relation to their goals, standards, and concerns. The gap theory of Calman extends this further by conceptualizing QoL as the gap between a given person's actual experience, and their desired or anticipated goals [9]. For patients with head and neck cancer the gap is often wide due to disease affecting key functions like: speech, swallowing and appearance, which impact upon social functioning and emotional health.

Past work suggests that patients with head and neck cancers are more likely to report poor quality of life due to both the disease and physical and psychological impact of its treatment. Therefore, patient quality of life is critical in not only the evaluation of treatment effectiveness, but also in the initial evaluation and planning of individualized patient care which closely relates to the patient’s experience. Information gathered through quality-of-life assessment informs clinical knowledge about patients’ subjective experience and informs changes in treatment modalities, supportive care and rehabilitation program offers. The patient’s experience, therefore, is a critical element of healthcare assessment to enable a more informed assessment of treatment effectiveness broader than simply survival [10].

The understanding of disease pathology, response to disease treatment, toxicity of treatment, and the role of psychosocial factors have an intricate relationship within a framework of assessing quality of life (QoL) in patients with head and neck cancer. Therefore, assessing QoL may improve clinical decision-making, help to individualize supportive care services, and ultimately contribute to a patient-centered outcome. With this in mind, the current study will describe the quality of life of head and neck cancer patients who attended the ENT outpatient clinic to describe the issues that they face and provide strategies to support these individuals.

Methodology

Study Design: This research was a descriptive, hospital-based, cross-sectional study intended to evaluate the quality of life (QoL) in patients diagnosed with head and neck cancer.

Study Area: The study was carried out at the Department of Ear, Nose and Throat (ENT) at Santosh Medical College and Hospital located in Ghaziabad, Uttar Pradesh, India.

Study Duration: The study was carried out over a period of two years, from January 2023 to December 2024.

Sample Size: A total of 64 patients were included in the study.

Study Population: The study population comprised patients diagnosed with head and neck cancers who attended the ENT outpatient clinic at Santosh Medical College and Hospital during the study period.

Inclusion Criteria

- Patients diagnosed with head and neck cancers attending the ENT outpatient department.
- Patients aged above 18 years.
- Patients who were able to comprehend and respond to the questions in the University of Washington Quality of Life (UW-QOL) questionnaire.
- Patients who provided written informed consent to participate in the study.

Exclusion Criteria

- Patients with unconfirmed diagnosis of head and neck cancer.
- Terminally ill patients who were unable to understand or respond to the questionnaire by any means.

Data Collection: Patients fulfilling the inclusion criteria were administered the University of Washington Quality of Life (UW-QOL) questionnaire, which includes aspects related to physical, emotional, dietary, and sexual well-being. Demographic and clinical details of the participants were also recorded.

Procedure: After obtaining informed consent, eligible patients were interviewed using the UW-QOL questionnaire in a private setting within the ENT outpatient department to ensure comfort and confidentiality. Assistance was provided to patients where required for understanding and completing the questionnaire.

Statistical Analysis: The collected data were tabulated using Microsoft Excel 2019. Categorical variables were summarized using frequencies and percentages. As this was a descriptive, cross-sectional study, no advanced statistical testing was performed.

Result

“Table 1 presents the demographic distribution of 64 individuals based on age and sex. The largest age group is 50–59 years, comprising 19 individuals (29.69%), followed by 60–69 years with 14 individuals (21.88%), and 70–79 and 30–39 years with 8 individuals each (12.5%). The 40–49 age group includes 7 individuals (10.94%), while the 80–89 group has 4 (6.25%), and the 90–99, 20–29, and under 20 age groups each have 1 to 2 individuals (1.56%–3.12%). In terms of sex distribution, males are the majority with 51 individuals (79.69%), and females represent 13 individuals (20.31%).

Table 1: Demographic Distribution

Category	Sub-category	N	%
Age (years)			
	90–99	2	3.12
	80–89	4	6.25
	70–79	8	12.5
	60–69	14	21.88
	50–59	19	29.69
	40–49	7	10.94
	30–39	8	12.5
	20–29	1	1.56
	Less than 20	1	1.56
Sex			
	Female	13	20.31
	Male	51	79.69
Total		**64**	**100**

Table 2 summarizes the lifestyle impact and mental status of 64 individuals. Pain was the most reported lifestyle concern, affecting 37 individuals (57.81%), followed by chewing difficulties and appearance issues, each reported by 24 individuals (37.5%), and swallowing problems in 20 individuals (31.25%). Other notable impacts included anxiety (21.88%), mood changes (18.75%), and limitations in activity (17.19%), while fewer individuals experienced issues with speech (12.5%), shoulder problems (10.94%), or recreational activities (3.12%). Regarding mental status, most individuals reported feeling neutral (24; 37.5%), while 18 (28.12%) felt somewhat depressed and an equal number reported generally good mental health (28.12%); a smaller proportion were extremely depressed (3; 4.69%), and only 1 individual (1.56%) reported feeling excellent and unaffected.

Table 2: Lifestyle Impact & Mental Status of individuals

Aspect	N	%
Lifestyle Impact		
Anxiety	14	21.88
Mood	12	18.75
Shoulder	7	10.94
Speech	8	12.5
Chewing	24	37.5
Swallowing	20	31.25
Recreation	2	3.12
Activity	11	17.19
Appearance	24	37.5
Pain	37	57.81
Mental Status		
Extremely depressed	3	4.69

Somewhat depressed	18	28.12
Neutral	24	37.5
Generally good	18	28.12
Excellent & unaffected	1	1.56

Table 3 details the severity of pain and the impact on chewing and swallowing among 64 patients. In terms of pain, most individuals reported moderate pain (25; 39.06%), followed by mild pain (18; 28.12%), very severe pain (12; 18.75%), severe pain (7; 10.94%), and only 2 individuals (3.12%) reported no pain. Regarding chewing, 28 individuals (43.75%) could chew only soft solids, 17 (26.56%) could not chew soft solids, and 16 (25%) experienced no chewing difficulties. Swallowing was unaffected in 18 individuals (28.12%), while 19 (29.69%) struggled with certain solid foods, 18 (28.12%) could only consume liquids, and 9 (14.06%) were unable to swallow at all.

Table 3: Pain, Chewing & Swallowing of all patients

Category	Sub-category	N	%
Pain severity	No pain	2	3.12
	Mild pain (25)	18	28.12
	Moderate pain (50)	25	39.06
	Severe pain (75)	7	10.94
	Very severe (100)	12	18.75
Chewing impact	No effect	16	25
	Can chew soft solid	28	43.75
	Cannot chew soft	17	26.56
Swallowing impact	Unaffected	18	28.12
	Certain solid food	19	29.69
	Only liquid food	18	28.12
	Cannot swallow	9	14.06

Table 4 presents data on saliva production, sexual satisfaction, and shoulder function among 64 patients. Half of the individuals (32; 50%) reported normal saliva levels, while 23 (35.94%) had less than normal saliva, 8 (12.5%) had very little, and 1 (1.56%) reported no saliva production. Regarding sexual satisfaction, half of the participants (32; 50%) felt neutral, while 17 (26.56%) were a little dissatisfied, 11 (17.19%) moderately dissatisfied, and 2 (3.12%) very dissatisfied; only 1 individual each (1.56%) reported being a little or moderately satisfied, and none reported being very satisfied. For shoulder function, most individuals (42; 65.62%) experienced no issues, while 13 (20.31%) reported stiffness without activity limitation, 5 (7.81%) had stiffness or pain affecting work, and 4 (6.25%) were unable to work due to shoulder problems.

Table 4: Saliva, Sexual Satisfaction & Shoulder Function of patients

Category	Sub-category	N	%
Saliva	Normal	32	50
	Less than normal	23	35.94
	Too little	8	12.5
	No saliva	1	1.56
Sexual satisfaction	Very dissatisfied (6)	2	3.12
	Moderately dissatisfied (5)	11	17.19
	A little dissatisfied (4)	17	26.56
	Neutral (3)	32	50
	A little satisfied (2)	1	1.56
	Moderately satisfied (1)	1	1.56
	Very satisfied (0)	0	0
Shoulder function	Unaffected	42	65.62
	Stiff, no activity effect	13	20.31
	Stiffness/pain changed work	5	7.81
	Cannot work	4	6.25

Discussion

In our study, Men comprised the largest percentage of participants (79.69%), with a male-to-female ratio of 3.9:1. This concurs with previous studies, such as those of Gomes et al. (2020) [11], who reported that 69.70% of HNC patients were male. The gender pattern of the HNC incidence is well documented and is largely attributed to lifestyle risk factors such as the use of tobacco and alcohol, which males are more prone to. Our results concur with such population trends."

Age distribution revealed most of the participants to be 50–59 years of age (29.69%), followed by 60–69 years (21.88%). This concurs with the research conducted by Gomes et al. (2020), which also had a mean age of 63.42 years among their study population. This age dominance is in line with cumulative carcinogenic risk factor exposure and late clinical presentation.

The most common complaint in our study was pain, in 57.81% of the patients. The most common severity level was moderate pain (39.06%). Oliveira et al. (2014) [12] also presented the same findings, since 66.9% of the patients required analgesics, but 59% of them still complained of pain. These findings emphasize the chronic and poorly controlled pain in HNC patients, supporting the need for global pain management strategies in QoL interventions.

Impairment of chewing (37.5%) and swallowing (31.25%) was also present in our population. This is in agreement with Rogers et al. (2000) [10], who reported speech, chewing, and swallowing as among the most important QoL factors from the patient's perspective. These functional impairments directly impact nutrition, social functioning, and overall feeling of well-being and subsequently lead to psychosocial distress.

Salivary dysfunction was noted by nearly half our patients, most of whom had or were receiving radiotherapy. This is consistent with Braam et al. (2007) [13], who found that 40% of HNC patients had established xerostomia five years following radiotherapy. This indicates the long-term effects of cancer therapy on QoL.

There was also psychological distress, with 28.12% of the patients experiencing some degree of depression and 4.69% severe depression. Kanatas et al. (2012) [14] also reported distress, with 44% of the patients experiencing significant anxiety or mood disturbances. These findings emphasize the potential for routine psychological screening and proactive interventions to improve mental health for patients with HNC.

Sexual dissatisfaction was reported by 47% of our patients, and most patients reported negative or indifferent sexual attitudes. Low et al. (2009) [15] found that the third of patients had severe sexual desire and pleasure issues following treatment. Such co-occurrence supports that sexual health is an overlooked but important aspect of QoL in HNC patients.

In relation to shoulder function, 20.31% of our patients had stiffness without disability, and 6.25% were unable to work due to shoulder dysfunction. This has been a complication of neck dissection surgery, as reported in other studies linking accessory nerve injury with postoperative restrictive function (Rogers, 2009) [16].

Overall, our findings are in accord with the literature for the complexity of impairment in QoL among HNC patients. The only exception is that recreation was the least impaired category in our study (3.12%), compared to some studies where social and recreational activities were most impaired [16]. This discrepancy can be attributed to national cultural differences or patient coping patterns.

Conclusion

The study focused on quality-of-life assessments in patients with head and neck cancer attending an ENT outpatient clinic found that patients faced significant challenges in many areas of their everyday life, particularly with pain, chewing and swallowing, and appearance, all of which were identified as severely impacted areas. Concerns with mental health such as depression and anxiety were also common, highlighting the psychological toll of the disease. Disrupted saliva production, sexual satisfaction, and shoulder function further diminished quality of life. Overall, the findings revealed significant quality of life impact to physical, emotional, and social well-being, reiterating challenging complexities and demonstrating the need for multidimensional and comprehensive management obtained through multidisciplinary care.

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