

OHRQOL: PSYCHOSOCIAL & PHYSICAL FUNCTIONING IN ORAL CANCER PATIENTS

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ABSTRACT

The study was to assess the impact of Oral Cancer on the Oral Health-related Quality of Life [OHRQoL] of active cancer patients

In this study, a cross-sectional design was used on 71 active cancer patients, aged between 20 and 59 years, seeking treatment at three government teaching hospitals in Lahore.

The data was collected in a two-month period using the socio-dental indicator of Oral Health Impact Profile [OHIP-14] by carrying out an interview with all patients. SPSS version 25 was used for data analysis and included descriptive statistics such as Frequency distribution. Kruskal Wallis test was run to assess the impact and significance of oral cancer on the OHRQoL of the patients. The level of significance was set at 5%.

Of the 71 adult Cancer patients aged 20-59 years, the male and female frequency was 84.5% and 15.5% respectively. With the floor of the mouth, a site of the Oral cavity with the highest percentage of Tumour/Lesion presence (42.3%) and the pharynx being the least involved (4.2%), most of the patients had no lymph node involvement (63.4%) and had started their Cancer treatment within the week (32.4%)

Age, Gender, Lymph node involvement and Metastasis showed no significance in terms of the Cancer impact on QoL. However, the Tumour/Lesion Site [$p < 0.001$] and time since receiving Treatment [$p < 0.05$] showed a significant impact on the Physical and functional discomfort of the OHIP-14 Domains. Similarly, the Tumour/Lesion site [$p < 0.05$] and time since receiving treatment [$p < 0.05$] showed a significant impact on psychological and social discomfort. Oral cancer and Oncological treatment greatly affect the diagnosed patient and his/her OHRQoL.

Keywords: OHRQoL, OHIP-14, Oral Cancer, Quality of Life, Oral Cancer patients

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INTRODUCTION

Oral cancer is categorized as one of the top ten most common cancers globally. More understanding of Oral cancer and advancement in its treatments have con-

tributed to more effective strategies for management. The QoL of patients' post-cancer treatment has become considerably more in the past decade. A patient's QOL gives better awareness of the multiple ranges of health challenges the patient encounters.¹

Health-related Quality of Life [HRQoL] is progressively being documented as a significant concern in Oncology. It encompasses 4 core domains: (A) psychological functioning; (B) physical functioning; (C) disease- and treatment-related symptoms; and (D) social interaction. HRQoL instruments follow a conceptual framework predicting daily functioning and well-being based on subjective experiences of social, emotional, and physical health. We have used the Oral Health Impact Profile [OHIP-14] to measure the oral status and its impact on the quality of life in cancer patients who have been recently diagnosed. This instrument contains 14 items

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evaluating oral health based on functional limitation, physical pain, psychological discomfort and disability, physical disability, social disability, and handicap.² Individuals with tumours in the oral cavity generally have some of the lowest quality of life compared to individuals with cancers in other body parts.^{3,4}

QOL is established as a significant indicator of treatment consequences. Patients with head and neck cancer are disposed to psychological problems since social interaction and emotional expression depend on these structures' structural and functional integrity. This is typical for cancers of the oral cavity and oropharynx. Such patients, facing a life-threatening condition, are also dealing with the impact of the disease and its treatment on appearance and important functions such as eating, speaking, and swallowing. This eventually leads to decreased physical and role functioning and problems with communication, and social interaction.⁵ Depression has also commonly occurred in these patients.⁶

Essentially, QoL measures how people feel about their place in society and their expectations and how they cope with their worries. High quality of life is determined by what is most important to an individual in their cultural and intellectual context. Physicians gain valuable information about the impact of a disease, how it may be treated, and how it might affect the quality of life.⁷

Since studies on oral cancer's effect on the quality of life are limited, this study is to find out the effect of oral cancer on oral health-related quality of life and to use that results to inform timely interventions for these patients, such as for these patients' therapies, and counselling aimed at enhancing their quality of life in terms of their mental, physical as well psychological health.

The objective of this study is to assess the impact of Oral Cancer on the Oral Health-related Quality of Life [OHRQoL] of active cancer patients using the Oral health impact profile (OHIP-14).

METHODOLOGY

This study adopted a cross-sectional research design to assess the impact of Oral Cancer on the Oral Health-Related Quality of Life of active Cancer patients.

The research was conducted in three Government Teaching Hospitals {Mayo Hospital, Ghurki Trust Teaching Hospital and Jinnah Hospital} in the month of October 2022 in Lahore. Male and female patients diagnosed with Oral Cancer and with ongoing treatment of a minimum of one week were included in the sample. Patients on N.G. tubes and those who went on to receive symptomatic treatment were excluded from the

sample. The data was collected in a two-month period using the socio-dental indicator of Oral Health Impact Profile [OHIP-14] by carrying out an interview with all patients. Seventy-one patients, aged between 20 and 59 years, agreed to the survey and then responded by answering all the 14-item Oral Health Impact Profile (OHIP-14) questions. It was brought to the notice of all participants that the information collected would be kept strictly confidential before, during, and after the study.

There were fourteen (14) questions in the questionnaire. The dimensions/subjects of the questions were as follows: 'Functional Limitation': trouble pronouncing words, worsened taste; 'Physical Pain': aching in mouth, discomfort eating food; 'Psychological Discomfort': feeling self-conscious or feeling tense; 'Physical Disability': interrupted meals or poor diet; 'Psychological Disability': difficulty relaxing, embarrassment; 'Social Disability': irritability, difficulty in doing usual jobs; 'Handicap': life less satisfying, inability to function.

Respondents/patients reported the occurrence of each impact during the prior year on a five-point scale ranging from: 'never' to 'hardly ever', 'occasionally', and 'fairly often' to 'very often'. In addition, information regarding the site of the Tumour/lesion, the time since they had started their treatment and whether lymph nodes were involved or not, were also taken from each patient. Each questionnaire had a code number, the same as that used on the data collection form.

SPSS version 25 was used for data analysis and included descriptive statistics such as Frequency distribution. Kruskal Wallis test was run to assess the impact and significance of oral cancer on the OHRQoL of the patients. The level of significance was set at 5%.

RESULTS

The final sample size was 71 patients. Results showed the perceived OHRQoL among adult Cancer patients aged 20-59 years. Male and female frequency was 84.5% and 15.5% respectively.

A major portion of the sample was in the age range

TABLE 1: DEMOGRAPHICS

| Age | Categories | N=71 (%) |
|--------|------------|-----------|
| | 20-29 | 18 (25.4) |
| | 30-39 | 21 (29.6) |
| | 40-49 | 24 (33.8) |
| | 50-59 | 8 (11.3) |
| Gender | Male | 60 (84.5) |
| | Female | 11 (15.5) |

TABLE 2: OHIP-14 DOMAINS AND CHARACTERISTICS

| Domains | Characteristics | 0 | 1 | 2 | 3 | 4 | Mean | +S.D. |
|--------------------------|-------------------------------------|----|----|----|----|----|------|-------|
| Functional Limitations | | | | | | | | |
| | Trouble pronouncing words | 29 | 4 | 16 | 11 | 11 | 1.59 | 1.52 |
| | Sense of taste worse | 18 | 8 | 13 | 23 | 9 | 1.96 | 1.40 |
| Physical Pain | | | | | | | | |
| | Painful aching in the mouth | 4 | 1 | 15 | 9 | 42 | 3.18 | 1.16 |
| Psychological discomfort | | | | | | | | |
| | Self-conscious | 2 | 6 | 9 | 20 | 34 | 3.10 | 1.09 |
| | Felt tense | 0 | 0 | 12 | 15 | 44 | 3.45 | 0.77 |
| Physical disability | | | | | | | | |
| | Uncomfortable to eat | 4 | 9 | 5 | 17 | 36 | 3.01 | 1.27 |
| | Unsatisfactory diet | 5 | 7 | 5 | 19 | 35 | | |
| | Had to interrupt meals | 39 | 6 | 12 | 5 | 9 | 1.14 | 1.46 |
| Psychological disability | | | | | | | | |
| | Difficult to relax | 4 | 9 | 24 | 12 | 22 | 2.55 | 1.21 |
| | Embarrassed | 46 | 7 | 9 | 6 | 3 | 0.77 | 1.20 |
| Social disability | | | | | | | | |
| | Irritability with other people | 55 | 7 | 9 | 0 | 0 | 0.35 | 0.69 |
| | Difficulty in doing your usual jobs | 39 | 9 | 13 | 6 | 7 | 1.14 | 1.38 |
| | Felt life less satisfying | 61 | 1 | 9 | 0 | 0 | 0.27 | 0.67 |
| Handicap | | | | | | | | |
| | Totally unable to function | 61 | 10 | 0 | 0 | 0 | 0.14 | 0.35 |

0= Never, 1= Once/twice, 2= Sometimes, 3= Often, 4= Everyday

TABLE 3: SIGNIFICANCE OF OHIP-14 WITH TUMOUR/LESION SITE, TIME SINCE TREATMENT, AND METASTASIS N=71

| Characteristics | Mean | +SD | Test of significance | p-value |
|-----------------------------------|------|--------|----------------------|-------------------|
| Physical & Functional discomfort | | | | < 0.001 < 0.05 |
| Tumour/Lesion Location | 0.99 | + 1.11 | Kruskal Wallis Test | |
| Time since receiving treatment | 1.34 | +1.14 | | |
| Metastasis | 0.63 | +0.48 | | |
| Lymph nodes involvement | 0.63 | +0.48 | | < 0.05 < 0.05 |
| Psychological & Social discomfort | | | | |
| Tumour/Lesion Location | 0.99 | + 1.11 | Kruskal Wallis Test | |
| Time since receiving treatment | 1.34 | + 1.14 | | |
| Metastasis | 0.63 | + 0.48 | | |
| Lymph node involvement | 0.63 | + 0.48 | | |

*Level of significance= p-value < 0.05

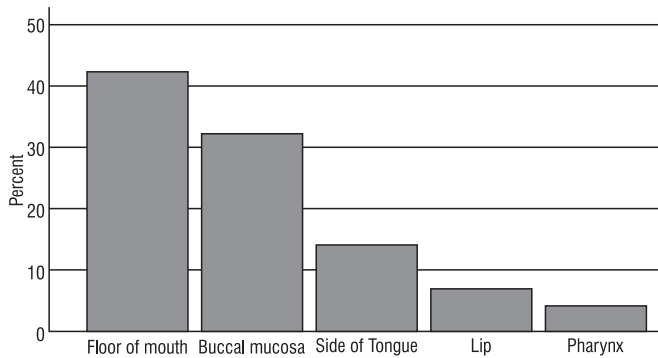


Fig 1: Location of Tumour/Lesion

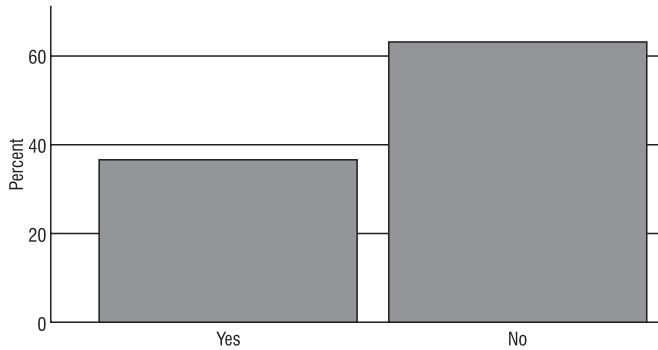


Fig 2: Lymph node involvement

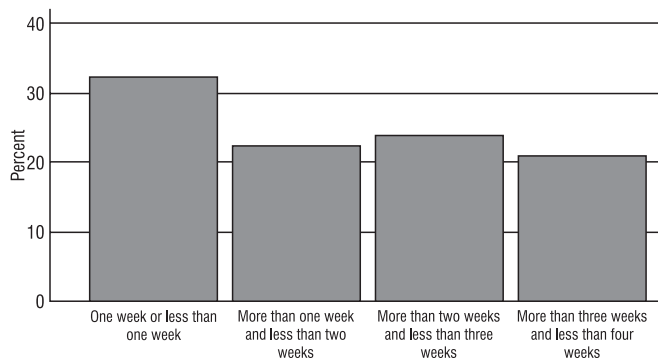


Fig 3: Time since receiving Treatment/Therapy

of 40-49 years (33.8%) whereas the smallest portion was 50-59 years (11.3%) [Table 1]. The floor of the mouth was a site of the Oral cavity with the highest percentage of Tumour/Lesion presence (42.3%) and the pharynx being the least involved (4.2%) [Fig.1]. Most of the patients had no lymph node involvement (63.4%) [Fig.2] and had started their Cancer treatment within the week (32.4%) [Fig.3]

Many of the OHIP-14 responses showed the newly diagnosed cancer patients struggling with their daily activities mainly related to their functional and psychological abilities which largely affected their ability to speak and eat, being self-conscious and tense every day and having difficulty relaxing when experiencing pain on a regular basis [Table 2].

Age, Gender, Lymph node involvement and Metastasis showed no significance in terms of the Cancer

impact on QoL. However, the Tumour/Lesion Site [$p<0.001$] and time of receiving Treatment [$p<0.05$] showed a significant impact on the Physical and functional discomfort of the OHIP-14 Domains [Table 3]. Similarly, the Tumour/Lesion site [$p<0.05$] and time of receiving treatment [$p<0.05$] showed a significant impact on psychological and social discomfort [Table 3]. Psychological discomfort entailed being self-conscious and tense because of the disease and social discomfort inhibited the patients from socializing, speaking, and interacting with others. Having the Tumour/Lesion present on the floor of the mouth and tongue caused a lot of pain during mastication with a diminished sense of taste and trouble pronouncing words clearly [Table 2, 3].

DISCUSSION

The overall survival rates for individuals with head and neck cancer have remained substantially unaltered despite recent improvements in diagnostic and therapeutic methods, particularly the expanding use of chemoradiation regimens. The examination of survivors' quality of life and function has followed from this.⁶⁻⁸

Head and neck cancer and its therapies have a significant influence on the patient's everyday life because of the distinct anatomical features of the afflicted regions. Such tumours often cause some degree of breathing, speaking, or swallowing difficulty as well as aesthetic deformity.⁹ Such changes in function and appearance may substantially affect the patient's self-image and psychosocial aspects of life.^{8,10,11} For these reasons, it is crucial to evaluate QOL in the community of people with head and neck cancer.

Quality of Life in Oral Cancer Patients is affected by an array of factors such as pain, chewing, swallowing, taste, saliva, appearance, mood, recreation, and anxiety.^{8,9} Since Oral health is a crucial part of general health and well-being, inadequacies in these factors indicate an impairment of OHRQoL.¹⁰ In the past decades, the OHIP-14 questionnaire has been utilized to identify the impacts of different treatment regimens for Oral Cancer on OHRQoL from patients' perspectives and understand the need for management.¹¹ The same OHIP-14 socio-dental measure was adapted for this research.

Our study assessed Oral cancer's impact on patients recently diagnosed and had just started their treatment. Their treatments were ranging from surgeries to chemotherapy and/or radiotherapy. Some were well into their treatment whereas others had started theirs a few weeks ago. Male and female frequency of Oral Cancer in our sample was 84.5% and 15.5% respectively which has been demonstrated by other studies as well.¹²

Poor masticatory efficiency of these patients accompanied by pain was noted. It has been established that OHRQoL is often impaired in Oral cancer patients¹³ and such patients face tremendous challenges in their masticatory function and efficiency which are either caused by the tumour/lesion itself or oncological treatment.^{14,15} We saw patients having their treatment ranging from a couple of weeks ago to a month ago. Although this did not significantly impact the lymph node involvement and metastasis, it greatly affected the patients' ability to eat, speak and smile and most of the patients in this study were experiencing such impairments.

The patients we studied had poor socialisation owing to the location of the tumour/lesion in their oral cavity affecting their speech.¹⁶ They were conscious and embarrassed to talk freely in public spaces and were careful not to smile as well. It is evident that Cancer and its treatment procedures, whatever stage it may be, affect the well-being of the patients, and it remarkably influences their psychological and social health as well as their physical and functional abilities. These effects can be seen in Table 3 with a high significance. Details of the OHIP-14 domains and their characteristics can be observed in Table 2, and as seen, pain is the prime factor for the poor mental, emotional, spiritual, and social well-being of the patient resulting in subsequent disability and deterioration related to their speech, mastication, and swallowing. Such physiological outcome measures have shown more deterioration in patients treated by surgery and radiotherapy than in patients treated by surgery only previously.¹⁷ A cross-sectional study showing the deterioration of masticatory performance was reported in 2-year survivors using the UW-QOL¹⁸ and displayed significantly lower scores for the item "chewing" in patients treated by surgery only, than in patients having been treated by surgery and radiotherapy. It has also been noted that radiotherapy is a negative prognostic factor for oral function.¹⁹ These results were obtained on patients treated for oral malignancies between 2 and 6 years after intervention. This same study also reported a significant correlation between resection size and functional outcome, meaning better functional outcomes with smaller excisions.³

Tumour size and location play an important part in the functional aspect of the oral cavity. A study using the UW-QOL questionnaire has previously reported a significant relationship between tumour size and chewing in preoperative patients.²⁰ Such patients would require therapies to overcome their difficulties in speaking and chewing. Our study shows the impact of oral cancer on the OHRQoL of active cancer patients and consequently highlights the dire need for related therapies in them to improve their daily life. Early counselling, physical therapy, speech therapy, and

psychosocial therapy are imperative to improve the OHRQoL of such patients. They should be encouraged to take one or any of the applicable therapies alongside their oncological treatments to ensure good Oral and physical functioning with improved mastication efficiency thereby improving their mental health and socialisation as well.

CONCLUSION

Our study shows that Oral Cancer impacts the general and Oral health-related Quality of Life in the patients undergoing treatment. It particularly affects psychosocial and physical functioning, and it is hence important that during treatments, radiotherapy and/or Chemotherapy, QoL is kept in consideration and necessary therapies are given in a timely manner to such patients to improve their mental, social, physical, and psychological health altogether.

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| 2 Shujaat Hasan Idris: | Literature review, critically appraised and edited the draft of manuscript. |
| 3 Sadia Iqbal: | Literature review and reviewed the initial manuscript. |
| 4 Schar Saleem: | Data analysis. |
| 5 Muhammad Haroon: | Conceived the idea, Data Collection, Data entry and Literature search. |
| 6 Asadullah Ashraf: | Conceived the idea, Data Collection, Data entry and Literature search. |