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ORAL HEALTH RELATED QUALITY OF LIFE AND DEPRESSIVE SYMPTOMS AMONG PATIENTS DETECTED WITH PRECANCEROUS LESIONS IN A DENTAL HOSPITAL OF DIBRUGARH DISTRICT- A CROSS-SECTIONAL STUDY

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ABSTRACT

Background- Oral cancer is one of the most widely prevalent diseases of the world. It is a form of malignant neoplasm found mostly on the lip, floor of the mouth, cheek lining, gingiva, palate or in the tongue. Aim- To assess and compare oral health related quality of life and depressive symptoms among adult patients detected with oral precancerous lesions and a healthy comparison group attending outpatient department of a dental hospital of Dibrugarh district. Methodology- A cross-sectional exploratory study was conducted among 250 adults diagnosed with precancerous oral lesions visiting the outpatient department of Government Dental College, Dibrugarh. The data was recorded by examiner with the help of a pre designed proforma. The proforma recorded the identification and basic demographic variables of the study participants and use of pre-validated Patient Health Questionnaire 9 scale for assessing depressive symptoms and OHIP - 14 tool for assessing the oral health related quality of life. Results- The mean age of study subjects with Premalignant lesions is 45.81 ± 5.05 years whereas of healthy study subjects is 40.85 ± 7.7 years. Majority of the study subjects in both the groups had mild depression symptoms but a few of them with premalignant lesions showed higher values of moderate and moderately severe depressive symptoms when informed about their conditions than the healthy group but it was not statistically significant. Functional limitation (0.715**), physical pain (0.738**), and psychological discomfort (0.819**) had a statistically significant strong positive correlation with their degree of depression, whereas physical disability (0.655**), psychological disability (0.545**), social disability (0.598**), and handicap (0.616**) had a moderate positive correlation with degree of depression. Whereas the healthy comparison group had a negative correlation with oral health related quality of life. Conclusion - The findings of this study highlight importance of early detection, prevention, and prompt management of precancerous oral lesions to enhance the overall well-being of affected individuals.

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INTRODUCTION

Oral cancer is one of the most widely prevalent diseases of the world. It is a form of malignant neoplasm found mostly on the lip, floor of the mouth, cheek lining, gingiva, palate or in the tongue. Head and neck cancer is considered as the

sixth most common type of cancer in the world. According to a recent report of GLOBOCAN 2020, cancer of lip and oral cavity is stated as the second most common type of cancer in both males and females in India. The incidence, mortality and prevalence rate of oral cancer is 10.3%, 8.8% and 21.77 per 100000 population respectively.[1]

Quality of Life is a multidimensional concept which looks at how patients feel about themselves in the context of a medical condition. The subjective evaluation of oral health-related QoL "reflects people's comfort when eating, sleeping, and engaging in social interaction; their self-esteem; and their satisfaction concerning their oral health. An individual's health-related QoL will be affected if the oral health is worsened. Oral health-related quality of life OHRQoL is defined as "a multidimensional construct that reflects (among other things) people's comfort when eating, sleeping, and engaging in social interaction; their self-esteem; and their satisfaction with respect to their oral health." [2]

When first diagnosed, cancer patients experience several physical, mental, emotional, and social difficulties, and the effects of the treatment on daily activities such as chewing, swallowing, and speech, can cause depression, anxiety, and stress, which must be treated to enable patients to cope.

Head and neck treatment methods such as surgeries, radiation therapy and chemotherapy, brings changes to their facial appearances and this disfigurement is often associated with self-image anxiety, low self-esteem, decrease in productivity and lack of self-confidence.[3] As disfigurement due to head and neck surgeries is often visible, they are known to be associated body image difficulties when compared to less visible cancers. Younger patients are more worried about disfigurement. Women, especially those with poor social support, have been found to be affected more often when they undergo disfiguring head and neck surgeries.

Head and neck cancer patients and doctors often perceive depressive and anxiety symptoms as natural responses to cancer and, as a result, patients with psychological symptoms may not report these symptoms to their oncologists, leading to both under-reporting and under-diagnosis. Factors that tend to precipitate psychological distress in patients are pain and other physical symptoms, social stressors, premorbid personality factors, prognostic factors, treatment-related side effects, past history of psychiatric morbidity and treatment. Studies have shown that anxiety is more common at the time of biopsy or prior to surgery, and people feel more depressed during the post-operative period. The usual responses are worries, fear, sense of helplessness, anguish and demoralisation. The prevalence of depression varies across studies. Studies have shown a prevalence of depression over the complete course of oral cancer treatment, from the time of evaluation through to recovery or palliation. The severity of physical symptoms and resultant dysfunctionality, lack of emotional and social support and coping styles of individual patients were associated with increased rates of depression in head and neck specially focusing on oral cancer patients.

Oral Cancer Screening for oral cancer implicates searching for oral potentially premalignant oral epithelial lesions and cancerous lesions, typically before symptoms occur. Precancerous lesions can be a major warning or an early detection sign for oral cancer as it is stated that about 80% of oral cancer progresses from precancerous lesions and about 2-12% of precancels are transformed into cancer. If a precancerous lesion develops, there is more chance of malignant transformation, which is defined by the World Health Organization (WHO) as "A morphologically altered tissue which has a greater than normal risk of containing a microscopic focus of cancer at diagnosis or of transforming into a malignancy after diagnosis". It has been well by many researchers that virtually all oral cancer is preceded by visible clinical changes in the oral mucosa usually in the form of white or red patch. These lesions are known as premalignant lesions and premalignant conditions. At a workshop by the WHO Collaborating Centre for Oral Cancer and Precancer in the United Kingdom, the term 'Oral potentially malignant disorder' (OPMD) was recommended. However, A new term 'potentially premalignant oral epithelial lesion' (PPOEL) has recently been used as a broad term to define both histologic and clinical lesions that have malignant potential Premalignant disorders are usually found on the buccal mucosa, followed by gingiva, tongue and floor of the mouth. This study is aimed to assess and compare oral health related quality of life and depressive symptoms among adult patients detected with oral precancerous lesions and a healthy comparison group attending outpatient department of a dental hospital of Dibrugarh district.

METHODOLOGY

A cross-sectional exploratory study was conducted among the adult population diagnosed with precancerous oral lesions visiting the outpatient department of Government Dental College, Dibrugarh. The study population consisted of approximately 250 samples diagnosed with precancerous oral lesions attending the dental outpatient department of the hospital. Study subjects who cooperated on the day of the interview were included in the study.

Inclusion criteria

- Patients detected newly with precancerous lesions attending the outpatient department of Government Dental College, Dibrugarh
- Patients above 18 years of age
- Patients detected with precancerous lesions who will be able to come for follow- up visit after 2 weeks
- Patients who had given consent

Exclusion criteria

- Patients whose diagnosis had not been confirmed
- Terminal cases who were not able to understand and/ or answer the questionnaire, by any means whatsoever were excluded.

The patients visiting the OPD of from June 2024 to November 2024 were included in the study. The pilot study was carried out among 60 study subjects to determine the sample size and to check the feasibility of the study. The sample size was estimated based on the prevalence of low oral health related quality of life obtained from the pilot study. The sample size was estimated using G*Power manufactured by Erdfelder, Faul and Buchner in the year 2007 (StatCalc, version 3, open-source calculator SSPropor) by assuming 80% power, 0.05 as alpha error, and effect size 1, assuming a 50% prevalence

of correct answers. [1,2] A total of 250 study subjects were included in the final sample.

Ethical Permission And Consent

Ethical approval as well as permission to conduct the study were obtained from the institutional review board. Ethical Committee approval (Ref No: AMC/EC/2025/1524 dated 06/01/2025). A written informed consent was obtained by the participants prior to the conduct of the study.

Data Collection

The data was recorded by examiner with the help of a pre designed proforma. The proforma recorded the identification and basic demographic variables of the study participants and use of pre-validated Patient Health Questionnaire 9 scale for assessing depressive symptoms and OHIP - 14 tool for assessing the oral health related quality of life.

Questionnaire

Patient Health Questionnaire 9 - The PHQ-9 was used as a self-administered, screening tool for assessment of the severity of depressive symptoms. Unlike other depression scales, PHQ-9 includes 9 items which focus on the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) for MDD. The questionnaire assesses how often the subjects had been disturbed by any of the 9 items during the immediately preceding 2 weeks. Each item of PHQ-9 was scored on a scale of 0–3 (0 = not at all; 1 = several days; 2 = more than a week; 3 = nearly every day). The PHQ-9 total score ranges from 0 to 27 (scores of 5–9 are classified as mild depression; 10–14 as moderate depression; 15–19 as moderately severe depression; ≥ 20 as severe depression)

Oral health impact profile (OHIP-14)- The oral health related quality of life of the participants was assessed using a self-administered pre-validated OHIP - 14 tool consisting of seven domains namely Functional Limitation, Physical Pain, Psychological Discomfort, Physical Disability, Psychological, Social disability and Handicap.

Clinical Examination

The diagnostic pathway for identifying oral potentially malignant disorders (OPMD) in patients with a clinically evident lesion starts with a full clinical history, followed by conventional oral examination (COE), which includes a thorough head and neck examination, evaluation of oral mucosa by visual inspection under incandescent overhead light or halogen illumination available on the dental chair, and palpation.

Statistical Analysis

Data were analyzed using Chicago, IL IBM SPSS Statistics 20.0 for Windows software. Descriptive statistics of the study subjects were depicted using mean percentages and standard deviation. Association was evaluated using Chi-square. Any P < 0.05 was considered significant. Spearman correlation rank test was also assessed to correlate. Independent sample t-test for intragroup comparison was used.

RESULTS

The mean age of study subjects with Premalignant lesions is 45.81 ± 5.05 years whereas of healthy study subjects is 40.85 ± 7.7 years. A majority 157 (62.8%) subjects with Premalignant lesions were males whereas among healthy study subjects, a majority 162 (64.8%) subjects were males. A statistically significant difference was found between subjects with Premalignant lesions and healthy study subjects and their socioeconomic status and body mass index. (p value ≤ 0.05) (Table 1)

Table 1. Distribution of demographic details among subjects with Premalignant lesions and healthy study subjects

	Subjects with Premalignant lesions n (%)
Age (years)	
18-27 years	0 (0%)
28-37 years	11(4.4%)
38-47 years	88 (35.2%)
48-57 years	149 (59.6%)
Above 58 years	2 (0.8%)
Gender	
Males	157 (62.8%)
Females	93 (37.2%)
Marital status	
Married	232 (92.8%)
Unmarried	18 (7.2%)
Location	
Urban	49 (19.6%)
Semiurban	162 (64.8%)
Rural	39 (15.6%)
Body mass index	
Underweight	46(18.4%)
Healthy/normal	69(27.6%)
Overweight	55(22%)
Obese	80(32%)
Socioeconomic status	
Upper	3 (1.2%)
Upper middle	11 (4.4%)
Lower middle	30 (12%)
Upper lower	113 (45.2%)
Lower	93 (37.2%)
Family history of Premalignant lesions	
Present	161 (64.4%)
Absent	89 (35.6%)

Majority of the study subjects in both the groups had mild depression symptoms but a few of them with premalignant lesions showed higher values of moderate and moderately

severe depressive symptoms when informed about their conditions than the healthy group but it was not statistically significant. [Table 2]

Table 2. Comparison of responses of the study subjects based on their severity of depressive symptoms

Responses	Subjects n(%)	Chi-square value	p-value	Significance
Mild depression	09	10.033	0.000	Significant
Moderate depression	49			
Moderately Severe depression	95			
Severe	97			

Functional limitation (0.715**), physical pain (0.738**), and psychological discomfort (0.819**) had a statistically significant strong positive correlation with their degree of depression, whereas physical disability (0.655**), psychological disability (0.545**), social disability (0.598**), and handicap (0.616**) had a moderate positive correlation with degree of depression. Whereas the healthy comparison group had a negative correlation with oral health related quality of life. [Table 3]The OHIP-14 scores were comparatively higher among males than females. [Table 4]

Table 3. Oral health related quality of life of the study subjects based on their degree of depressive symptoms

	Subjects with Premalignant lesions n(%)	Healthy comparison group n(%)
Functional limitation	0.715**	-0.015
Physical pain	0.738**	-0.912
Psychological discomfort	0.819**	-0.064
Physical disability	0.655**	-0.131
Psychological disability	0.545**	-0.127
Social disability	0.598**	-0.452
Handicap	0.616**	-0.041

**Correlation is significant at 0.01 level (two-tailed).

Table 4. Comparison of OHIP-14 parameters among males and females

	Males	Females
Functional limitation	0.938	0.891
Physical pain	0.915	0.881
Psychological discomfort	0.919	0.887
Physical disability	0.915	0.872
Psychological disability	0.906	0.864
Social disability	0.909	0.812
Handicap	0.912	0.891

DISCUSSION

Oral health-related quality of life (OHRQoL) as an effect of precancerous lesion is complex, involving physical pain, psychological distress, limitations in social functioning, and impairments in daily activities. [4]

The findings of this cross-sectional study shed light on the impact of precancerous oral lesions on various aspects of patient quality of life.

Our study revealed that patients QoL with precancerous lesions experienced the most significant impact in the domains of functional limitations, physical pain, and psychological discomfort based on the degree of depressive symptoms. These findings are similar with studies conducted by Gift HC et.al [4] and Slade GD et.al [5] where the detrimental effects of oral diseases on daily functioning and emotional well-being were highlighted.

Such co-relation of physical and psychological domain with increase in depressive symptoms definitely calls for the need to prevent by implementation of strategies of well-being and providing primary interventions to alleviate the burden of precancerous lesions and improving the patient's quality of life.

Our study also conducted a comparison of OHRQoL scores across different age groups. OHIP-14 scores were found to be highest in the patients belonging to the middle-age group (40-60 years). This indicated that people belonging to the middle age group were greatly impacted with a negative quality of life. The most probable cause could be the demand of their active association with social, personal as well as professional responsibilities, leading to consequences in oral health impairments.

Similar findings were also observed in study conducted by Shilpa A Warhekar et.al, Mishra.G et. al, Sheiham A et.al, stating age-related differences in OHRQoL [6,7,8].

Although, majority (62.8%) subjects with premalignant lesions were males, gender based analysis stated that female patients reported significantly higher OHIP-14 scores than their male counterparts. This finding is consistent with previous studies showing that women often experience greater psychological distress and a higher degree of impairment in their quality of life when faced with oral health issues. [9]

The findings of this study highlight the importance of early detection, prevention, and prompt management of precancerous oral lesions to enhance the overall well-being of affected individuals. However, the study was conducted at a single tertiary care hospital in Dibrugarh, Assam, India, which may limit the ability to apply the results to other populations and healthcare settings.

CONCLUSION

In conclusion, assessing quality of life (QoL) and symptoms in patients with oral cancer plays a pivotal role in guiding dentists toward addressing the most pressing concerns and providing targeted interventions. By prioritizing comprehensive pre-treatment dental care, clinicians can help mitigate oral complications, enhance treatment tolerance, and ultimately improve the patient's overall well-being. A multidisciplinary

approach, encompassing both clinical management and psychosocial support, ensures that patients receive holistic care, fostering better treatment outcomes and a more positive QoL trajectory. Empowering patients with timely interventions and compassionate guidance remains fundamental in alleviating the burden of oral cancer and promoting long-term health and recovery.

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