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Study of anxiety disorders and its association with quality of life in patients of oral cancer

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ABSTRACT

Background: Anxiety is a response to a threat that is unknown/known, internal/external, vague, or conflictual, cancer is threatening and so many patients are anxious. **Aim and Objectives:** The present study was performed to assess the prevalence of anxiety disorders (AD) and quality of life (QoL) and its association in patients of oral cancer. **Materials and Methods:** There were 62 patients attending cancer OPD of tertiary care center was assessed for cross-sectional, observational, and questionnaire-based study. Patients those diagnosed with oral cancer were included in our study. They were diagnosed for AD by clinical interview using DSM-5 diagnostic criteria. We assessed QoL in patients with oral cancer by scale of Functional Assessment of Cancer Therapy-Head and Neck (FACT-H&N Version 4). Patients were further assessed for demographic details. Statistical analysis was done using SPSS version 15, proportions were compared using Chi–square test, FACT H&N QoL scores were compared by Mann–Whitney U test. $P<0.05$ was considered to be statistically significant. **Results:** We found that 17.74% had AD and those patients who were diagnosed of AD have poorer QoL in all domains of FACT H&N QoL. **Conclusions:** QoL was found to be poor in patients with oral cancer who had diagnosed with AD then those without AD.

Key words: Anxiety; Demographic details; Oral cancer; Quality of life

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INTRODUCTION

Anxiety is a response to threat that is unknown/known, internal/external, vague, or conflictual, cancer is threatening and so many patients are anxious.[1] Anxiety is expected to affect psychological and physical health and also may undermine interpersonal relationships with family, friends, and formal and informal caregivers.[2]

Head-and-neck cancer (HNC) is one of the 10 most frequently occurring cancers worldwide, with estimates of over 500,000 new cases annually, and one of the 10 leading causes of cancer mortality.[3] The incidence of HNC is relatively low in developed countries and highest in South-east Asia.[4]

Multiple reports cite the incidence of anxiety in advanced stage cancer population between 6% and 34%.[5-11] HNCs are the most common cancers among males in India and 70–80% present in advanced stage.[12]

Mental health of cancer patients is equally important because it not only affects the quality of life (QoL) of cancer patients, but also influences the physical outcome of cancer patients.[13]

Inevitably, the notion of "QoL" has become increasingly important in patient treatment, particularly in oncology where life expectancy is limited and treatment rarely offers total recovery.[14]

Aims and objectives

Present study was performed to assess the prevalence of Anxiety disorders (AD) and quality of life & its association in patients of oral cancer.

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MATERIALS AND METHODS

Our study included 62 patients of oral cancer from our institute, Bhavnagar which is tertiary care center. Diagnosis and staging of oral cancer was done by radiotherapist of tertiary care center. Approval from the Local Ethics Committee was taken and patients informed and written consent were taken.

All the patients were interviewed for diagnosis of anxiety disorders (AD) according to the criteria of DSM-5. They were also interviewed about their various demographic variables. The past history and family history of psychiatric illness were documented. Information was taken regarding type of cancer, stage of cancer, its severity, and treatment modalities. Participants were also assessed for QoL using the instrument of FACT-H&N Version 4.[15]

FACT-H&N Version 4.[15] (Functional Assessment of Cancer Therapy-Head and Neck). The questionnaire is self-rating. FACT-G is a QoL instrument. It is 5-point Likert scale ranging from 0 (not at all) to 4 (very much). It has 27 questions that measure the health state of person over the past 7 days. It has following four subscales.

1. Physical well-being (PWB)
2. Social well-being (SWB)
3. Emotional well-being (EWB)
4. Functional well-being (FWB)

HNC-specific subscale (HNCS) is specific to HNC.

Scoring of FACT H&N QoL

Questions are phrased so that higher numbers indicate a better health state; therefore, some items are being reversely scored. The FACT-G is obtained by summing individual subscale scores (PWB+EWB+SWB+FWB). The total score of FACT-H&N QoL consists of the sum of the FACT-Gplus the H&N-specific subscale

The statistical analysis was done by GraphPadInStat. Chi-square test was applied and scores of HADS-A, HADS-D, FACT-G, and FACT-HN were compared by Unpaired t-test and Mann–Whitney U test. $P<0.05$ was considered statistically significant.

RESULTS

We had taken the 62 patients of oral cancer between the ages of 18–55 years from oncology OPD of tertiary care hospital. As shown in Table 1, 77.42% are male and 22.58% are females among 62 patients. About 38.71% are from rural area, 40.32% are from urban area, and 5.81% are from town area. About 8.06% are employed,77.42% are laborer, and14.52% are semi-professional. About 35.48% are illiterate, 29.03% had primary education, 24.19% had secondary education, and 11.29% are graduate. The most of the patients are Hindu (91.94%). Most are tobacco users (91.94%) and most are in Stage 4 of oral cancer. Most of the patients (40.32%) had taken combined therapy (chemo+surgical).

Data were presented as no. (%). We found that 17.74% patients had AD. In our study, panic type of anxiety disorder was only found and its frequency was 17.74% (Table 2)

Table 1: Sociodemographic data of patients

Variables	Frequency (%)
Age group	
18–28	04 (6.45%)
29–38	14 (22.58%)
39–48	20 (32.26%)
49–58	24 (38.7%)
Gender	
Male	48 (77.42%)
Female	14 (22.58%)
Residence	
Rural	24 (38.71%)
Urban	25 (40.32%)
Town	13 (5.81%)
Socioeconomical status	
Class 1	00 (0%)
Class 2	12 (19.35%)
Class 3	43 (69.35%)
Class 4	07 (11.30%)
Marital status	
Married	59 (95.16%)
Unmarried	03 (4.84%)
Education	
Illiterate	22 (35.48%)
Primary	18 (29.03%)
Secondary	15 (24.19%)
Graduate	07 (11.29%)
Religion	
Hindu	57 (91.94%)
Muslim	05 (8.06%)
Past h/o psychiatric illness	
Yes	02 (3.23%)
No	60 (96.77%)
Family h/o psychiatric illness	
Yes	02 (3.23%)
No	60 (96.77%)
Tobacco use	
Yes	57 (91.94%)
No	5 (8.06%)
Cancer stages	
Stage I+II+III	25 (40.32%)
Stage IV	37 (59.68%)
Treatment modalities	
Chemotherapy alone	21 (33.87%)
Surgical therapy alone	11 (17.74%)
Combine therapy (chemo+surgical therapy)	25 (40.32%)
No therapy	05 (8.06%)

Data were presented as no. (%)

Data were represented in numbers (%) or mean±SD, groups were compared by Chi-square test, Unpaired t-test, and Mann–Whitney U test, P<0.05 is considered to be statistically significant. Sociodemographic variables in oral cancer patients according to present and absent of AD are shown in Table 3.

There were no any statistically significant difference found in demographic variables of age (P=0.6850), gender (P=0.1089), residence (P=0.4770), occupation (P=0.2704), socioeconomical status (P=0.9135), marital status (P=0.9601), education (P=0.5849), and religion (P=0.8904) between these two groups.

Table 2: Frequency of anxiety disorders in patients with oral cancer according to DSM-V criteria

Variable	No of oral cancer patients (n=62) (%)
Anxiety disorders	11 (17.74%)
Specific phobia	0 (0%)
Social phobia	0 (0%)
Panic disorder	11 (17.74%)
Agoraphobia	0 (0%)
Generalized anxiety disorder	0 (0%)

Table 3: Comparisons of sociodemographic variables according to presence or absence of anxiety disorders

Variables	Anxiety disorders		P value
	Present, n=11 (17.74%)	Absent, n=51 (82.26%)	
Age	45.18±6.8	43.20±9.2	0.6850
Gender			
Male	06 (54.55%)	42 (82.35%)	0.1089
Female	05 (45.45%)	09 (17.65%)	
Residence			
Rural	06 (54.55%)	18 (35.29%)	0.4770
Urban	03 (27.27)	22 (43.14%)	
Town	02 (18.18%)	11 (21.57%)	
Occupation			
Unemployed	0 (0%)	5 (9.80%)	0.2704
Laborer	08 (72.73)	40 (78.43%)	
Semi-professional	03 (27.27%)	6 (11.76%)	
Socioeconomical status			
Upper (I+II)	02 (18.18%)	10 (10.61%)	0.9135
Lower (III+IV)	09 (81.82%)	41 (80.39%)	
Marital status			
Unmarried	0 (0%)	3 (5.88%)	0.9601
Married	11 (100%)	48 (94.12%)	
Education			
Illiterate	5 (45.45%)	17 (33.33%)	0.5849
Primary	4 (36.37%)	14 (27.45%)	
Secondary	1 (9.09%)	14 (27.45%)	
Graduate or higher	1 (9.09%)	6 (11.76%)	
Religion			
Hindu	10 (90.90%)	47 (92.16%)	0.8904
Muslim	1 (9.09%)	4 (7.84%)	

Data were represented in mean±SD. Scores of FACT-H&N Version 4, data of frequency of tobacco use and data of duration of diagnosis were compared by Unpaired t-test and Mann–Whitney U test. Data regarding history of tobacco use were compared by Chi-square test. P<0.05 was considered statistically significant. We divided the patients;[1] with AD[2] without AD as shown in Table 4. All the domains of FACT-H&N QoL show statistically significant differences by Unpaired t-test and Mann–Whitney U test. It suggests that patients with AD had poor QoL as compared to patients who did not have AD. There are no any statistically significant differences found between tobacco use, frequency of tobacco use per day, and duration from diagnosis of oral cancer.

DISCUSSION

This study focused on determining the frequency of AD and its association with QoL in patients with oral cancer. In our study, diagnosis of AD are made by a clinical interview based on DSM V.

Similar to the previous studies,[16] the finding of this study showed that older age groups were more prone to depression. Older patients experience longer disease duration, a higher risk of cancer metastases, and more disabilities, all of which contribute to depression.[17]Another reason could be that older patients have difficulty asking for assistance and communicating with others. Furthermore, worrying about excessive treatment costs and family financial difficulties may be causes of psychological distress.

High magnitude of anxiety can be related to end-stage cancer. In line with this, our study also showed that patients with cancer with advanced disease stages are vulnerable to anxiety. This might be related to the higher levels of physical debilitation and advanced illnesses. The prevalence of psychiatric disorders mostly varies at different stages of cancer. Despite the fact that adjustment disorders with depressed or anxious moods are more frequent at the early stage of the disease, severe psychiatric complications such as very severe anxiety and major depression are more common in late stages of cancer. As a result, patients with late-stage cancer are more likely to be subjected to high doses of chemotherapy or any other anti-cancer treatment, resulting in a loss of appetite. Chemotherapy has been reported to cause severe sadness, anger, anorexia, and anxiety in patients with cancer, despite the fact that it frequently enhances survival rates.[18]

In our study, 17.74% patients had AD and finding was same like previous studies but in that study, all the types of

Table 4: Association of anxiety disorders and quality of life (FACT-H&N QoL score) in patients with oral cancer

Variables	Anxiety disorders (present) n=11	Anxiety disorders (absent) n=51	P value
FACT-H&N Version 4			
PWB	13.36±5.4	17.61±5.3	0.0203
SWB	12.09±4.7	15.72±5.2	0.0380
EWB	10.73±4.9	17.14±4.7	0.0007
FWB	10.55±3.6	15.27±3.8	0.0004
HNCS	16.45±2.8	20.08±5.3	0.0329
FACT-G total	46.73±12.6	65.74±12.8	<0.0001
FACT-H&N total	63.19±13.6	85.82±15.4	<0.0001
Tobacco			
H/O Tobacco use	11 (100%)	46 (90.20%)	0.6365
No H/O Tobacco use	0 (0%)	05 (9.8%)	
Frequency of tobacco use per day	6.73±2.5	6.59±7.1	0.1638
Duration of diagnosis (year/s)	8.45±13.6	8.51±9.7	0.3909

PWBL: Physical well-being, SWB: Social well-being, EWB: Emotional well-being, FWB: Functional well-being

cancer are included in the study.[19] In our study, we found that patients of oral cancer with AD had higher anxiety symptoms and had poorer QoL (Table 4) which was similar with other study but in that study, measurement of QoL and it's association AD were done in all the type of cancer.[20]

Several factors may impact the development of anxiety among cancer patients, including the cancer type, stage, grade, and treatment option.[19] Interestingly, our results are aligned with the findings of several studies, where specific tumor types can lead to anxiety, particularly head-and-neck, lung, breast, and prostate cancer,[20] which, in our research, showed that anxiety are more prevalent in the inpatient setting in patients with HNC, lung cancer, and bladder cancer, while in the outpatient setting, they were more prevalent among patients diagnosed with prostate and breast cancer.

It is very rare study. Most of the studies were done related to depression and QoL in cancer patients but in our study, we have assessed prevalence of anxiety disorder and its association with QoL in patients of oral cancer.

Limitations of the study

We had taken participants from a tertiary care hospital. It was single-center study and had small sample size; therefore, it does not represent the general population. Our study was cross-sectional so cause-effect relationship of cancer and AD cannot be measured. It was not the follow-up study so repeatedly changes in QoL cannot be measured. Hence, large scale, randomized, and longitudinal study is required to study cause-effect relationship that will be recommended.

CONCLUSION

In our results, we found that 17.74% of oral cancer had AD. On comparison, we found that among all oral cancer patients, those who had diagnosed with AD have poor QoL as well as higher psychological distress like higher anxiety symptoms then those without AD.

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REFERENCES

1. Ashbury FD, Findlay H, Reynolds B and McKerracher K. A Canadian survey of cancer patients' experiences: Are their needs being met? J Pain Symptom Manage. 1998;16(5):298-306. https://doi.org/10.1016/s0885-3924(98)00102-x
2. Cancer care during the last phase of life. J Clin Oncol. 1998;16(5):1986-1996. https://doi.org/10.1200/JCO.1998.16.5.1986
3. Chen YJ, Chang JT, Liao CT, Wang HM, Yen TC, Chiu CC, et al. Head and neck cancer in the betel quid chewing area: Recent advances in molecular carcinogenesis. Cancer Sci. 2008;99(8):1507-1514. https://doi.org/10.1111/j.1349-7006.2008.00863.x
4. Mehanna H, Paleri V, West CM and Nutting C. Head and neck cancer--Part 1: Epidemiology, presentation and prevention. BMJ. 2010;341:c4684. https://doi.org/10.1136/bmj.c4684
5. Smith EM, Gomm SA and Dickens CM. Assessing the independent contribution to quality of life from anxiety and depression in patients with advanced cancer. Palliat Med. 2003;17(6):509-513. https://doi.org/10.1191/0269216303pm781oa
6. Teunissen SC, De Graeff A, Voest EE and De Haes JC. Are anxiety and depressed mood related to physical symptom burden? A study in hospitalized advanced cancer patients. Palliat Med. 2007;21(4):341-346. https://doi.org/10.1177/0269216307079067
7. Ewing G, Todd C, Rogers M, Barclay S, McCabe J and Martin A. Validation of a symptom measure suitable for use among palliative care patients in the community: CAMPAS-R. J Pain Symptom Manage. 2004;27(4):287-299. https://doi.org/10.1016/j.jpainsymman.2003.12.012

8. Miovic M and Block S. Psychiatric disorders in advanced cancer. Cancer. 2007;110(8):1665-1676.
https://doi.org/10.1002/cncr.22980
9. Sheard T and Maguire P. The effect of psychological interventions on anxiety and depression in cancer patients: Results of two meta-analysis. Br J Cancer. 1999;80(11):1770-1780.
https://doi.org/10.1038/sj.bjc.6690596
10. Kissane DW, Grabasch B, Love A, Clarke DM, Bloch S and Smith GC. Psychiatric disorder in women with early stage and advanced breast cancer: A comparative analysis. Aust N Z J Psychiatry. 2004;38(5):320-326.
https://doi.org/10.1080/j.1440-1614.2004.01358.x
11. Kangas M, Henry JL and Bryant RA. The course of psychological disorders in the last year after cancer diagnosis. J Consult Clin Psychol. 2005;73(4):763-768.
https://doi.org/10.1037/0022-006X.73.4.763
12. Gandhi AK, Roy S, Thakar A, Sharma A and Mohanti BK. Symptom burden and quality of life in advanced head and neck cancer patients: AIIMS study of 100 patients. Indian J Palliat Care. 2014;20(3):189-193.
https://doi.org/10.4103/0973-1075.138389
13. Musuuza JS, Sherman ME, Knudsen KJ, Sweeney HA, Tyler CV and Koroukian SM. Analyzing excess mortality from cancer among individuals with mental illness. Cancer. 2013;119(13):2469-2476.
https://doi.org/10.1002/cncr.28091
14. Babin E, Sigston E, Hitier M, Dehesdin D, Marie JP and Choussy O. Quality of life in head and neck cancers patients: Predictive factors, functional and psychosocial outcome. Eur Arch Otorhinolaryngol. 2008;265(3):265-270.
https://doi.org/10.1007/s00405-007-0561-0
15. Cella DF, Tulsky DS, Gray G, Sarafian B, Linn E, Bonomi A, et al. The functional assessment of cancer therapy scale; development and validation of general measures. J Clin Oncol. 1993;11(3):570-579.
https://doi.org/10.1200/JCO.1993.11.3.570
16. Satin JR, Linden W and Phillips MJ. Depression as a predictor of disease progression and mortality in cancer patients. Cancer. 2009;115(22):5349-5361.
https://doi.org/10.1002/cncr.24561
17. Pinquart M and Duberstein PR. Depression and cancer mortality: A meta-analysis. Psychol Med. 2010;40(11):1797-1810.
https://doi.org/10.1017/S0033291709992285
18. Stark D, Kiely M, Smith A, Velikova G, House A and Selby P. Anxiety disorders in cancer patients: Their nature, associations, and relation to quality of life. J Clin Oncol. 2002;20(14):3137-3148.
https://doi.org/10.1200/JCO.2002.08.549
19. Smith HR. Depression in cancer patients: Pathogenesis, implications and treatment (Review). Oncol Lett. 2015;9(4):1509-1514.
https://doi.org/10.3892/ol.2015.2944
20. Pitman A, Suleman S, Hyde N and Hodgkiss A. Depression and anxiety in patients with cancer. BMJ. 2018;361:k1415.
https://doi.org/10.1136/bmj.k1415

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ASK- Concept and design of the study and prepared first draft of manuscript; **KBC-** Interpreted the results, reviewed the literature, and manuscript preparation; **AUV-** Concept, coordination, and preparation of manuscript; and **BNP-** Statistical analysis and interpretation.

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