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Assessment of Quality of Life and Psychosocial Issues in Head and Neck Cancer Patients in Pre and Post Chemoradiation: A Prospective Observational Study



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ABSTRACT

Head-and-neck cancers (HNCs) account for 30% of all cancer cases in India. Head and neck cancer includes those cancers originating in the oral cavity, pharynx (nasopharynx, oropharynx, or hypopharynx), nasal cavity, paranasal sinuses, salivary glands, and larynx. Combined multimodality treatment including surgery, chemotherapy, and radiation has increased disease control for locally advanced HNC. HNC arises in structurally complex and functionally important areas and interfere with basic functions like eating, speech, swallowing, and breathing. Head and neck cancer has profound psychosocial and physical effects on patient quality of life (QoL). "Health-related QoL" (HRQoL) is a more specific area of QoL that mainly deals with the impact of the disease and its treatment-related morbidities on a patient's physical, psychological, and social aspects. The purpose of this study was to assess the impact of quality of life of patients with head and neck cancer in pre and post chemoradiation.



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INTRODUCTION

Head and neck cancer is the commonest cancer in India and consists of about one-third of all cancers. According to the Indian Council of Medical Research (ICMR) Atlas, approximately 0.2 to 0.25 million new HNC patients are diagnosed each year^[1]. The QoL has become increasingly important in patient treatment, particularly in oncology. Health-related Quality of Life (HRQoL) plays a more important role in HNC patients than in any other group of cancer patients. Quality of life (QoL) is a multi-dimensional concept that includes domains related to physical, emotional, social functioning, and mental^[3]. To assess the QoL of the patients affected by HNC it is important to understand the impact of the disease and its treatment in the patient's daily routine and improve the care protocol with more encompassing clinical, social, and rehabilitation support measures. Several QoL domains are immensely affected by the treatment regimens for head and neck cancer patients. For head and neck cancer (HNC), the principle domains to achieve are mainly survival with the improvement of QoL. Patients with HNC, which is life-threatening, also have to deal with the impact of treatment on numerous aspects of QoL including functional disturbances such as speech, swallowing, hearing, associated with social interaction, which holds crucial importance in the individual life. Several QoL domains are immensely affected by the treatment regimens for head and neck cancer patients. For head and Neck Cancer (HNC), the principle domains to achieve are mainly survival with the improvement of QOL.

Treatment may be carried out by using surgery, radiotherapy, chemotherapy, or a combination of these modalities. Radiotherapy, with or without chemotherapy may cause transient side effects, which may subside at the end of treatment. Concurrent chemoradiation remains the standard of care, in the management of patients with locoregionally advanced head and neck cancers. In addition, the tumor site may need surgical resections which can lead to changes in appearance, body image, and emotional impacts. This clinical scenario is accentuated by the presence of symptoms like xerostomia, dysgeusia, oral mucositis, pain, and dysphagia^[4] probably as a treatment result. This set of Changes can have an impact on the health-related Quality of life changes (HRQOL) of these patients.

Head and neck cancer and its treatment can have a profound impact on some of the most fundamental functions of life. Patients have unique challenges including difficulties in eating, speech, pain, and emotional distress^[5]. This is because of the possibility of debilitating

physical problems as well as the psychological effects of change in body image and loss of function.

The psychological factors for lowering the quality of life in head and neck cancer patients, include depressed mood, feeling of guilt, insomnia, agitation, suicide. High suicide rates highlight the importance of improving not only survival of head and neck cancer diagnosis and treatment but also the quality of life. Several sociodemographic factors (male gender, younger age, lower education, less social support, smoking, unemployment, and being unmarried or living alone), as well as clinical factors (symptoms of depression before treatment, comorbidities, higher tumor stage), were associated with depression. Psychological intervention needs an evidence base regarding the efficacy of psychological intervention for improving the quality of life for head and neck cancer patients.

Anxiety is associated with loss of occupation, social isolation or social status play an important role. Fear of cancer recurrence is a common symptom of anxiety in cancer patients.

AIM:

To assess the Quality of life in patients with Head and Neck Cancer in pre and post-chemoradiation in the oncology department of Government General Hospital, Guntur.

LITERATURE REVIEW:

- Earnest A weymuller et al., (2003) has conducted a study on Quality of Life in Patients With Head and Neck Cancer is a prospective analytical study. Data was collected by using a questionnaire at 3, 6, 12, 24, and 36 months for each patient including the site of treatment, cancer stage, type of treatment, histologic findings, surgical reconstruction, and current health status. They concluded that patient participation in a head and neck cancer support group is associated with improved QOL after treatment.^[2]
- Yojana Sharma et al., (2019) has conducted a study on Quality of Life in Head and Neck Cancer Patients is a prospective longitudinal study consisting a sample size of 130 patients was done within the period of one and half year. QoL was assessed pre-treatment and at 4 times at different stages of the follow-up period. They concluded that the QoL in head and neck cancer has improved health related quality care and patient satisfaction.^[3]
- V Loimu et al., (2015) has conducted a study on Health-related quality of life of head and neck cancer patients with successful oncological treatment is a prospective cohort study

consisting of 64 subjects with laryngeal, pharyngeal, or nasal cavity carcinoma treated with definitive chemoradiation therapy. They concluded that the overall HRQoL declined significantly during the first 3 months after the treatment but then gradually improved towards the end of the follow-up.^[6]

- Ahmad Masroor et al(2020) has conducted a study on health-related quality of life assessment for head and neck cancer patients during 3 months after radiotherapy is a prospective analytical study consisting of 120 subjects out of which 111 completed the study and 9 were excluded. They concluded that there is a significant improvement in QoL for the patients throughout treatment about functions and reduction of symptoms in the treatment of HNC.^[7]

OBJECTIVES:

- To study and understand the Quality of life in patients with head and neck cancer by EORTC QLQ H&N43 scale, Hamilton depression and anxiety scales, and self-designed, validated questionnaire.
- To emphasize pharmaceutical care in improving QOL.

MATERIALS AND METHODS



Study Place: Department of Radiation Oncology, Government General Hospital, Guntur.

- **Period of Study:** 6 months, Oct 2020- March 2021
- **Study Design:** Prospective observational study
- **Sample size :** A total of 80 Patients who were suffering with head and neck cancer and were advised for routine follow up in the department of radiotherapy were chosen.

MATERIALS USED:

- Patient consent form
- Patient data collection form
- Patient Quality of Life assessment questionnaire
- Patient information leaflet

SUBJECT RECRUITMENT CRITERIA

INCLUSION CRITERIA:

- Patients whose origin of cancer (primary lesion) involved in head and neck.
- Patients who are diagnosed with head and neck cancer.
- Patients who are on chemotherapy and radiation therapy for head and neck cancer.
- Patients with age > 18 years.
- Those who can understand English or the local language.
- Patients who are concerned to participate in the study.
- Patients who are willing for regular follow-up.

EXCLUSION CRITERIA

- Patients whose origin of cancer is other than head and neck cancer.
- Patients with age < 18 years.
- Female patients with pregnancy and lactation.
- Patients who are extremely ill and unable to answer.
- Patients with no valid informant.
- Patients with the past history of psychiatric disorders.

STUDY PROCEDURE:

The study was conducted after getting approval from the Institutional Human Ethics Committee and informed consent from patients. Then patients were screened based on inclusion and exclusion criteria. Patients who satisfy inclusion criteria were included in the study. After including the subjects in the study the data was collected in the designed validated data collection form. The self-designed and validated questionnaire was used to assess the Quality of life in head and neck cancer patients which consist of 51 questions which represent the difference between the past and present health status of the patient. The collected data was tabulated and interpreted using suitable statistical software.

After completion of treatment, patients were followed up as outlined below:

- i. The first follow-up was done at 4 weeks (1 month) from the completion of treatment.
- ii. Second, follow up at 12 weeks (3 months) from the completion of treatment.
- iii. Patients were assessed for changes in Quality of life using the EORTC QLQ-H&N35, depression by using the Hamilton depression scale, anxiety by using the Hamilton anxiety scale.
- iv. Patients were also encouraged to visit earlier if any new or progressive symptoms developed. All patients were encouraged to adhere to good oral hygiene and abstain from any form of tobacco.
- v. Only patients who completed EORTC QLQ-H&N35, Hamilton depression scale, Hamilton anxiety scale on all the 5 occasions (before treatment, 4th week of treatment, just on completion of treatment, 1-month post-treatment, and 3 months post-treatment) were considered for analysis.

STATISTICAL ANALYSIS:

The data obtained was entered in an advanced Microsoft excel spreadsheet and evaluated. For statistical analysis, Epi info 3.5.1 version was used, and Chi-square test as done with the 95% confidence interval at alpha value 0.05 and the p-values < 0.05 are considered to be significant.

RESULTS

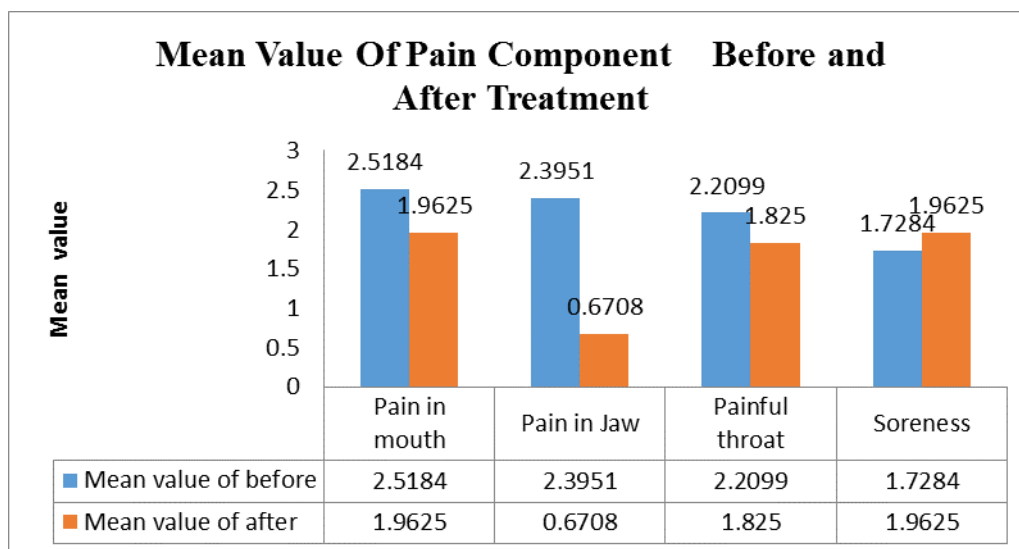
TABLE 1: SOCIODEMOGRAPHIC FACTORS

S.NO	COMPONENTS	FREQUENCY
1.	GENDER	
	Male	67(83.75%)
	Female	13(16.25%)
2	AGE	
	21-30 years	5
	31-40 years	13
	41-50 years	18

	51-60 years	24
	61-70 years	14
	71-80 years	5
	81-90 years	1
3.	SOCIOECONOMIC STATUS	
	Low	60(75%)
	Moderate	16(20%)
	High	4(5%)
4.	OCCUPATION	
	Government employee	3(3.75%)
	Business	16(20%)
	Farmer	29(36.25%)
	Private	26(32.5%)
	Housewife	6(7.5%)
5.	FAMILY HISTORY OF CARCINOMA	
	YES	1(1.25%)
	NO	79(98.75%)
6.	HOSPITALISATION HISTORY	
	YES	5(6.25%)
	NO	75(93.75%)

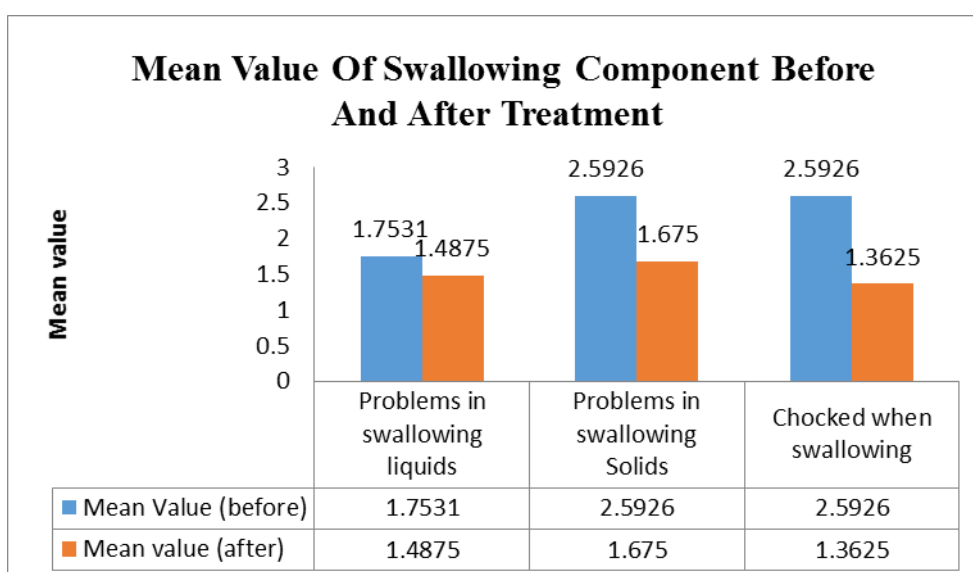
In a sample of 80 patients taken, 67 are males(83.75%) and 13 are females (16.25%) with the mean age of 20-80yrs belonging to low socioeconomic status 60 (75%), moderate 16(20%), high 4 (5%) with the occupation of farmer 29 (36.25%), private 26 (32.5%), business 16 (20%), housewife 6 (7.5%), government employ 3(3.75%) having 1 subject with a family history of carcinoma.

TABLE 2: MEAN VALUE OF PAIN COMPONENT BEFORE AND AFTER TREATMENT



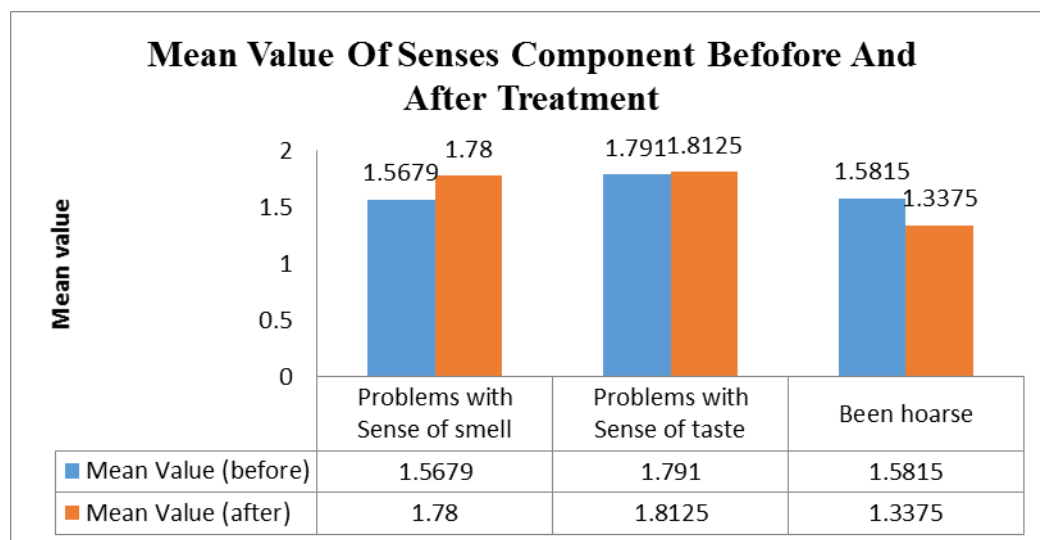
In fig 2, Subjects suffering with pain in the jaw [before -2.3951 and after- 0.6708] has shown more improvement in quality of life when compared to patients suffering from pain in the mouth [before - 2.5184 and after -1.9625] & throat [before -2.2099 and after 1.8225]. In case of patients suffering from soreness [before- 1.7284 and after- 1.9625], decreased quality of life is observed.

TABLE 3: MEAN VALUE OF SWALLOWING COMPONENT BEFORE AND AFTER TREATMENT



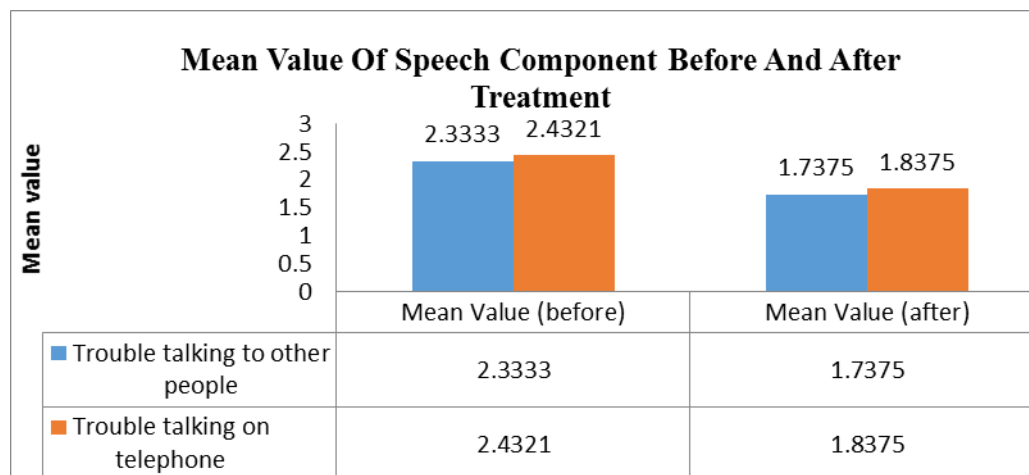
In fig 3, Subjects suffering from choked when swallowing [before- 2.5926 and after- 1.3625] has shown more improvement in quality of life when compared to subjects who are having problems in swallowing solids before- 2,5926 and after- 1.675]& liquids [before- 1.7531 and after-1.4875].

TABLE 4: MEAN VALUE OF SENSES COMPONENT BEFORE AND AFTER TREATMENT



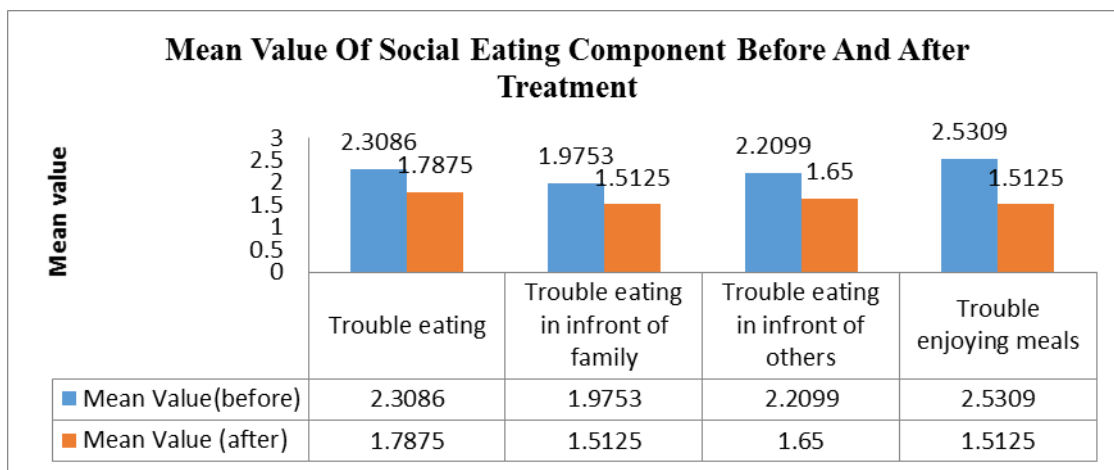
In fig 4, Subjects who have problems with a sense of taste [before- 1.791and after- 1.8125] and smell [before-1.5679 and after- 1.78] have shown a reduced quality of life. But -in the case of hoarseness [before- 1.5815 and after- 1.3375] subjects have shown improvement in quality of life.

TABLE 5: MEAN VALUE OF SPEECH COMPONENT BEFORE AND AFTER TREATMENT



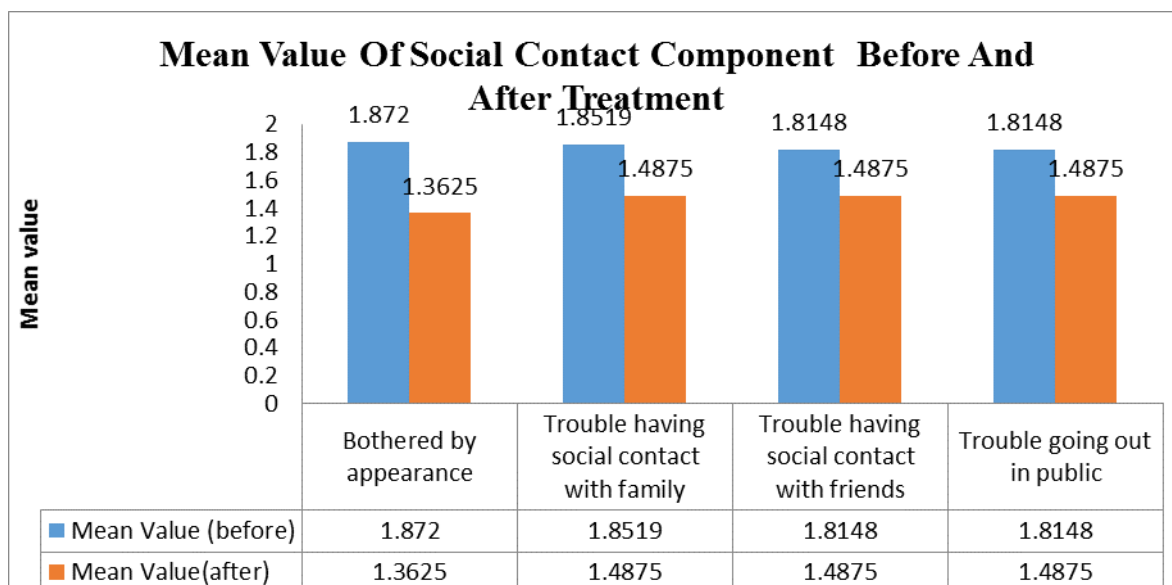
In fig 5, Patients who are having trouble talking to other people [before- 2.3333 and after- 1.7375] and on the telephone [before- 2.4321 and after- 1.8375] have shown a reduced quality of life.

TABLE 6: MEAN VALUE OF SOCIAL EATING COMPONENT BEFORE AND AFTER TREATMENT



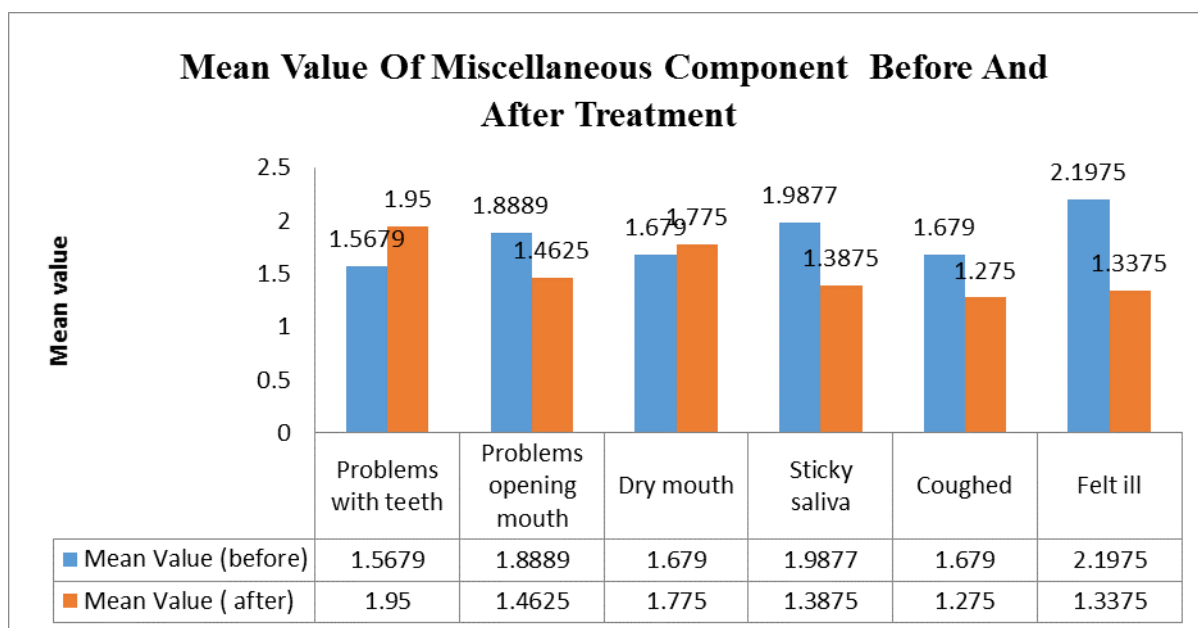
In fig 6, Patients who have trouble in social eating has shown improved quality of life in parameters of trouble eating [before-2.3086, after-1.7875], Trouble eating in front of family [before-1.9753 after-1.5125], Others [before-2.2099, after-1.65] .

TABLE 7: MEAN VALUE OF SOCIAL CONTACT COMPONENT BEFORE AND AFTER TREATMENT



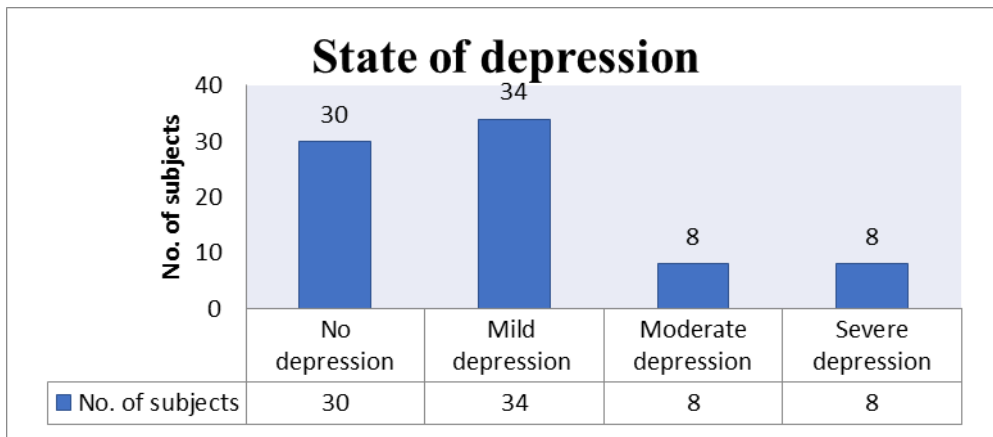
In fig 7, Patients who are having trouble in social contact with family [before- 1.8519 and after- 1.4875] and friends [before- 1.8148 and after- 1.4875] has shown improved quality of life, and Subjects who are having trouble going out in public [before- 1.8148 and after- 1.4875] & bothered by appearance [before- 1.872 and after- 1.3625] has shown the decreased quality of life.

TABLE:8: MEAN VALUE OF MISCELLANEOUS COMPONENTS BEFORE AND AFTER TREATMENT



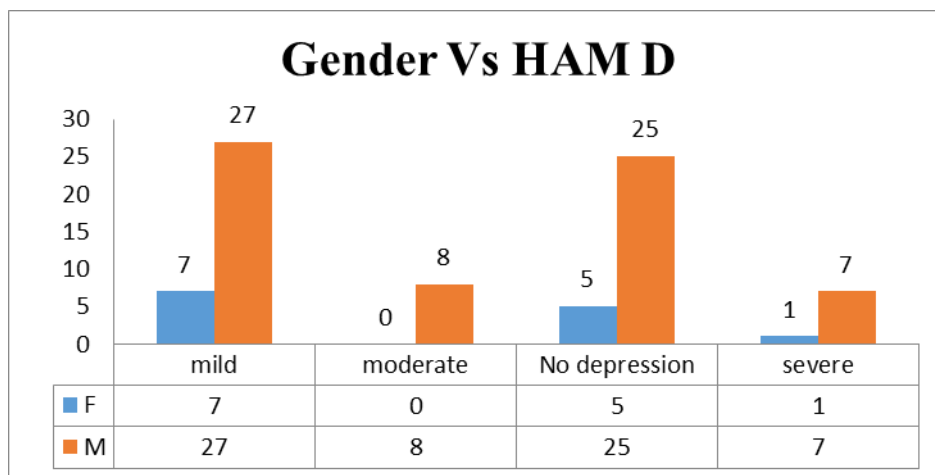
In fig 8, Patients having problems with teeth [before- 1.5679 and after- 1.95] and dry mouth before- 1.679 and after- 1.775] have shown the reduced quality of life whereas parameters that showed the increased quality of life are felt ill [2.1975 and after- 1.3375], sticky saliva [before- 1.9877 and after- 1.387], coughed [before- 1.679 and after- 1.27] problem in opening mouth [before- 1.8889 and after- 1.4625].

TABLE 9: HAMILTON DEPRESSION



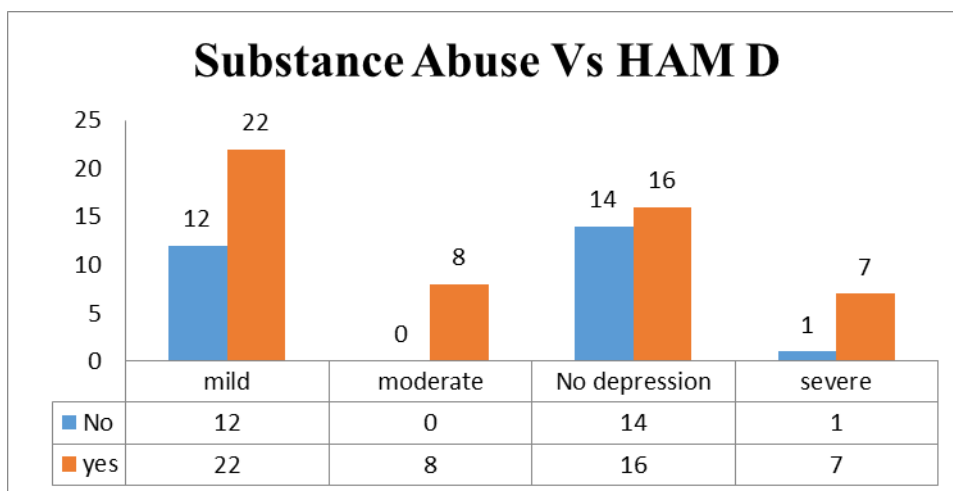
In fig 9, Subjects who are suffering from o depression are 30(37.5%), mild depression 34(42.5%), moderate depression 8 (10%), and severe depression 8 (10%).

TABLE 10: GENDER VS HAMILTON DEPRESSION



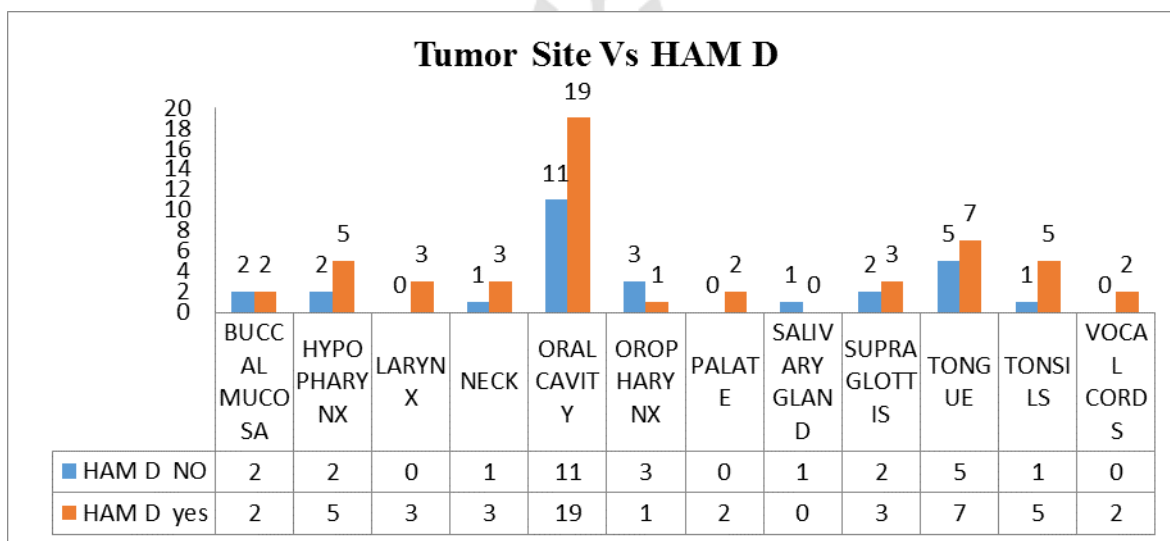
In Fig 10, It is depicted as males 67 (83.75%) are suffering from more depression when compared to females 13 (16.25%).

TABLE 11: SUBSTANCE ABUSE VS HAMILTON DEPRESSION



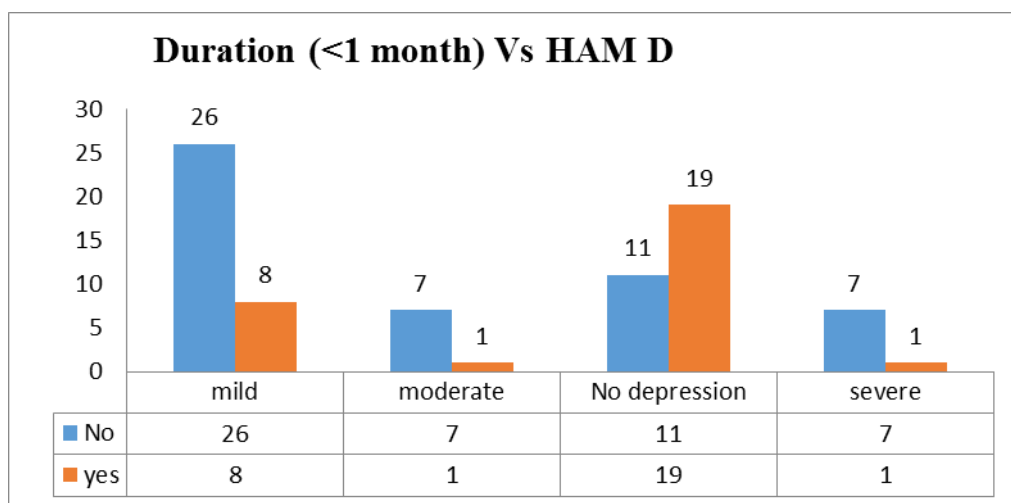
In fig 11, Subjects who have the habit of substance abuse are suffering from more depression 53 (66.25%) when compared with subjects who don't abuse substances 27 (33.75%), which is statistically significant with a p-value of 0.0467.

TABLE 12: TUMOR SITE VS HAMILTON DEPRESSION



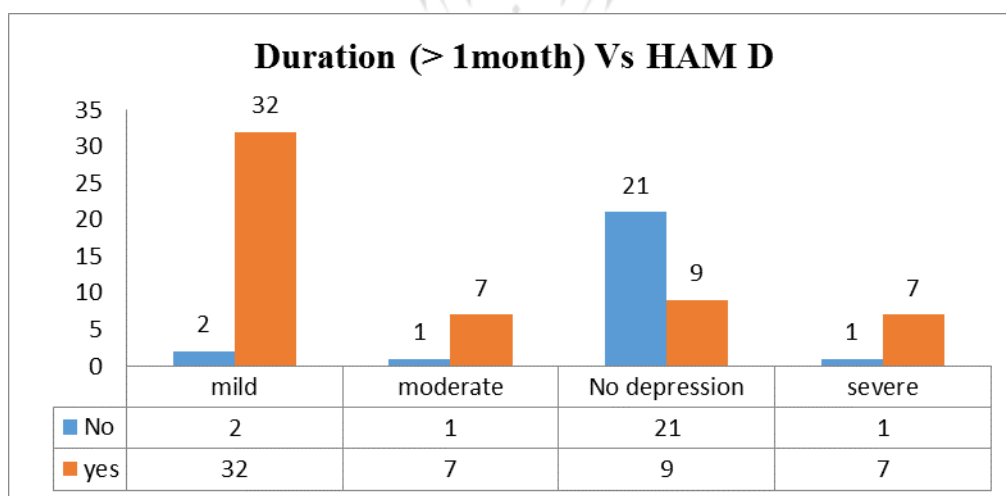
In the above graph, Subjects with carcinoma of ORAL CAVITY 19 (36.53%) are having more depression than the persons with carcinoma of tongue 7 (13.46%), tonsil 5(9.61%), hypopharynx 5 (9.61%), larynx 3(5.76%), supraglottis 7 (5.76%), neck 3(5.76%), buccal mucosa 2 (3.84%), vocal cord 2 (3.84%), palate 2(3.84%), oropharynx 1 (1.92%).

TABLE 13: DURATION <1 MONTH VS HAMILTON DEPRESSION



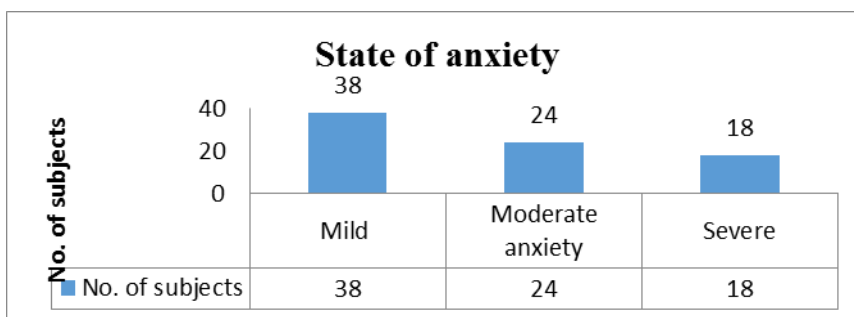
Among the subjects who are receiving concurrent chemoradiation less than 1 month and presenting with no depression 51 (63.75%) are greater than subjects who are having depression 29 (36.25%), which is statistically significant with a P-value of 0.0012.

TABLE 14: DURATION >1MONTH VS HAMILTON DEPRESSION



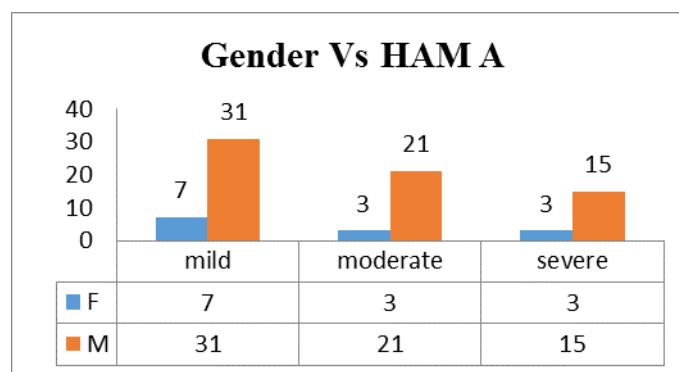
Subjects who are on concurrent chemotherapy greater than 1 month are having more depression 55 (68.75%) is greater than subjects who are not having depression 25 (31.25%), which is statistically significant with a P value of 0.0000.

TABLE 15: HAMILTON ANXIETY



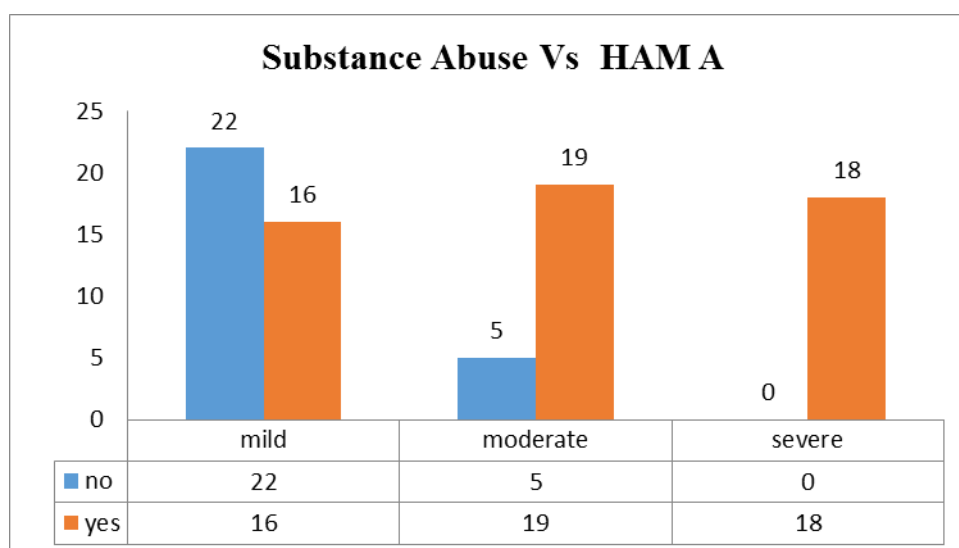
In fig 15, Subjects who are suffering from mild anxiety 38(47.5%), moderate 24 (30%), and severe depression 18 (22.5%).

TABLE 16: GENDER VS HAMILTON ANXIETY



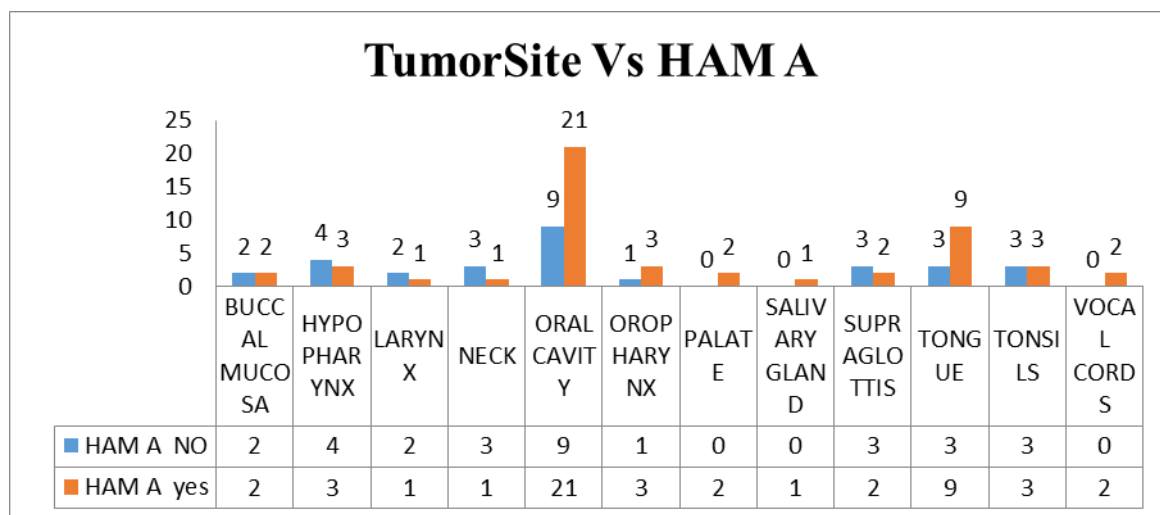
It is depicted as males 67 (83.75%) are suffering from more anxiety when compared with females 13 (16.25%).

TABLE 17: SUBSTANCE ABUSE VS HAMILTON ANXIETY



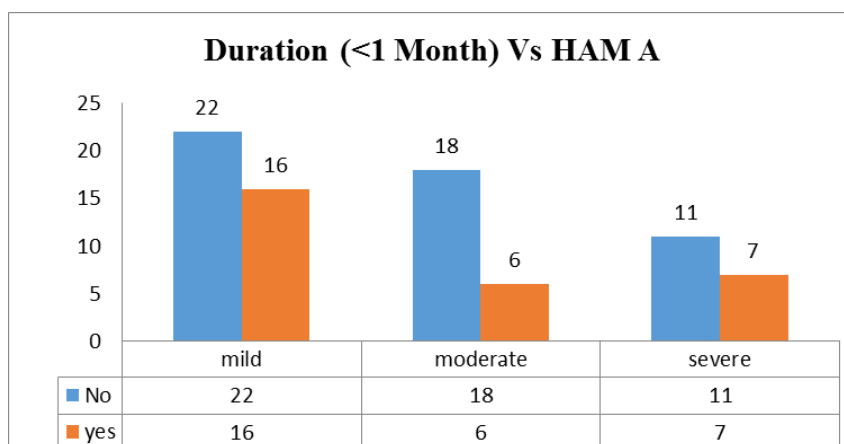
Subjects who have the habit of substance abuse are more suffering from anxiety 53 (66.25%) when compare with subjects who don't abuse substances 27(33.75%), Which is statistically significant with a p-value of 0.0000.

TABLE 18: TUMOR SITE VS HAMILTON ANXIETY



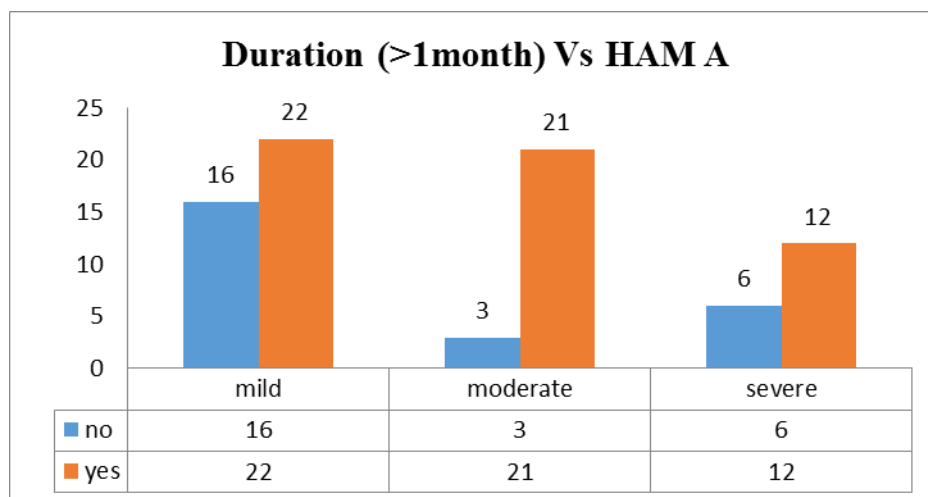
In the above graph, Subjects who are having anxiety 50 (62.5 %) are more when compared to subjects who are not having anxiety 30 (37.5%). Persons with carcinoma of ORAL CAVITY 21 (42%) are having more anxiety than the persons with carcinoma of tongue 9 (18%), tonsil 3(6%), hypopharynx 3 (6%),oropharynx 3 (6%), buccal mucosa 2 (4%),palate 2(4%), supraglottis 2 (4%),vocal cord 2 (4%), larynx 1(2%), neck 1(2%) ,salivary gland 1 (2%) . Subjects with carcinoma of oral cavity 9(30%) are not having anxiety than subjects with carcinoma of hypopharynx 4 (13.33%), neck 3 (10%), supraglottis 3 (10%), tongue 3 (10%), tonsil 3(10%), buccal mucosa 2(6.66%), larynx 2 (6.66%), oropharynx 1(3.33%).

TABLE 19: DURATION < 1 MONTH VS HAMILTON ANXIETY



Among subjects who are receiving concurrent chemotherapy less than 1 month, less number of subjects are experiencing anxiety 29 (36.25%) when compared with subjects who are not having anxiety 51 (63.75%).

TABLE 20: DURATION > 1 MONTH VS HAMILTON ANXIETY



Subjects who are on concurrent therapy for more than 1 month are having anxiety 55 (68.75%) is greater than subjects who are not having anxiety 25 (31.25%).

DISCUSSION

A prospective observational study was carried out on “Assessment of quality of life in head and neck cancer in pre and post chemoradiation and pharmaceutical management” conducted at NATCO Cancer Center, Government General Hospital, Guntur. A total of 80 patients with head and neck cancer met the inclusion criteria and were included in the study. The data obtained were tabulated and analyzed. Earlier studies on psychiatric aspects among carcinoma patients mainly dealt with either quality of life or only psychiatric disorders.

Sociodemographic factors

The demographic data showed that head and neck cancer is more common in males 67 (83.75%) when compared to females 13 (16.25%). For the assessment of results, we categorized the obtained patients within the age of 21-90 years were as follows. In our study with we found that majority of the patients were under the age group of 51-60yrs : 24 (30%), 41-50yrs : 18 (22.5%) followed by 61-70yrs :14 (17.5%) ,31-40yrs :13(16.25%),21-30yrs : 5 (6.25%), 71-80yrs :5 (6.25%) , 81-90yrs :1(1.25%).

In our study, we found subjects with low socioeconomic status 60 (75%), moderate socioeconomic status 16 (20%), and high socioeconomic status 4 (5%). Our study showed an increased risk in those people belonging to low socioeconomic status, which might be a reason for emotional instability and hence, resulting in increased psychological stress.

In this study the occupation of subjects are such as farmer 29 (36.25%), private 26 (32.5%), business 16 (20%), housewife 6 (7.5%), government employ 3(3.75%) and the association of family history in head and neck cancer patients was assessed. In our study, subjects presenting without family history 79 (98.75%) are more when compared with subjects presenting with family history 1(1.25%), site of cancer tongue 16 (%), buccal mucosa 11 (%), hypopharynx 8 (%), supraglottis 5(%), neck 4 (%), larynx 3 (%), tonsil 3 (%), oropharynx 2 (%), mouth 2 (%), parotid 2 (%) pyriform sinus 2 (%), lip 1(%), RMT 1(%), hard palate 1(%), soft palate 1(%), mandible 1(%), maxilla 1(%).

Risk factors

In our study, we observed risk factors associated with head and neck cancer patients include smokers: 45(56.25%), non- smokers: 35(43.75%), with the history of smoking 1- 10 yrs : 16(20%), 11-20yrs: 19(23.75%), 21-30yrs: 3(3.75%) ; alcoholics: 41(51.25%), non-alcoholics: 39 (48.75%) with history of drinking alcohol 1-10 yrs: 18 (43.9%), 11-20yrs: 13(31.70%), 21-30yrs: 1 (2.43%) and abuse of substance - 30(37.5%) including Kainee- 13(43.33%), Ghutka- 5 (16.66%), Paan- 5 (16.66%), Chutta - 4 (13.33%) and factor of exposure to sunlight 1-5hrs : 30 (37.5%), 6-10hrs: 40(50%), 11-17hrs: 10 (12.5%) ; radiation 3 (3.75%) 77 (96.25%) ; preserved salt foods 57(71.25%) 23(28.75%).

In our study we observed that the quality of life has improved in the parameters related to pain (before treatment- 2.213 ; after treatment-1.6052), swallowing (before treatment- 2.3128 ; after treatment- 1.5083), speech(before treatment- 2.3827 ; after treatment- 1.7875), social eating(before treatment- 2.2562 ; after treatment- 1.6156), social contact(before treatment- 1.8384 ; after treatment- 1.4563), sticky saliva(before treatment- 1.9877; after treatment- 1.3875), cough(before treatment- 1.679 ; after treatment- 1.275) and also there was a significant decline in quality of life in parameters relating with senses[smell and taste] (before treatment- 1.6468 ; after treatment- 1.6433), problems with teeth(before treatment- 1.5679 ; after treatment- 1.95) & dry mouth(before treatment- 1.679 ; after treatment- 1.775).

Pain

The painful sites involved were jaw, mouth, and throat. According to the painful site, the result was calculated by comparing the mean values before and after the treatment. Quality of life has improved in all the parameters of pain which was indicated by a decrease in the mean value. Before the treatment include pain in jaw (2.3951), pain in mouth (2.5184), pain in throat (2.2099) and after the treatment the results were pain in jaw (0.6708), pain in the mouth (1.9625), pain in the throat (1.8225) [Table 2].

Swallowing

In the assessment of the swallowing related quality of life... difficulty in swallowing solids, liquids, and feeling choked when swallowing were taken as QOL parameters. Swallowing component before treatment include choked when swallowing (2.5926), swallowing solids (2.5926), swallowing liquids (1.7531) and after treatment the results were choked when swallowing (1.3625), swallowing solids (1.675), swallowing liquids (1.4875). The decrease in the mean value of the above parameters indicates that there was an improvement in the quality of life [Table 3].

Senses

In the assessment of senses related quality of life problems with a sense of smell and taste were taken as QOL parameters. Patients having problems with a sense of taste [before- 1.791 and after- 1.8125] and smell [before- 1.5679 and after- 1.78] has shown increased mean value indicating the decreased quality of life [Table 4].

Speech

In The assessment of speech, we found that parameters of patients having trouble talking to other people [before- 2.3333 and after- 1.7375] and on the telephone [before- 2.4321 and after- 1.8375] has shown increased mean value indicating the decreased quality of life [Table 5].

Social Eating

In the case of social eating and social contact, we found that patients having trouble in social eating has shown improved quality of life after the treatment when compared with the quality of life before the treatment [Table 6].

Social Contact

Patients having trouble in social contact with family [before- 1.8519 and after- 1.4875] and friends [before- 1.8148 and after- 1.4875] have shown improved quality of life. Subjects having trouble going out in public [before- 1.8148 and after- 1.4875] & bothered by appearance [before- 1.872 and after- 1.3625] has shown a decreased quality of life [Table 7]. We found a noticeable disease improvement in quality of life in the parameters of physical, and social function, which is different from the **Scharloo et al.**, in which there was an improvement in the emotional function and a worsening in social & physical function throughout the follow-up period.

Miscellaneous Components

In the assessment of other individual factors affecting Quality of life, patients having problems with teeth [before- 1.5679 and after- 1.95] and dry mouth [before- 1.679 and after- 1.775] have shown the reduced quality of life whereas parameters Such as, felt ill [before- 2.1975 and after- 1.3375], sticky saliva [before- 1.9877 and after- 1.387], coughed [before- 1.679 and after- 1.27] problem in opening mouth [before- 1.8889 and after-1.4625] has shown improved Quality of life [Table 8].

Gender Vs Hamilton Depression

In the assessment of depression among head and neck carcinoma patients, males - 67 (83.75%) are suffering from more depression when compared to females- 13 (16.25%). In the case of males, Subjects suffering from mild depression 27 (40.29%) and no depression 25 (37.3%) are more when compared with subjects having moderate 8 (11.94%) and severe 7 (10.44%) state of depression. In the case of females, subjects having mild state 7 (53.84%) are more when compared with no depression 5 (38.46%) and severe state 1(7.69%).

Substance Abuse Vs Hamilton Depression

Subjects who have the habit of substance abuse are suffering from more depression 53 (66.25%) when compared with subjects who don't abuse substances 27 (33.75%), which is statistically significant with a p-value of 0.0467. Subjects who are in mild state 22 (41.50%) are more when compared with subjects who are with no depression 16 (30.18%), moderate 8 (15.09%), and severe 7 (13.20%). In the case of subjects who are not having the habit of

substance abuse, patients with no depression 14 (82.35%) are more when compared with subjects who are in, mild state 12 (70.05%) severe state 1 (13.20%).

Tumor site Vs Hamilton Depression

When we assessed depression associated with tumor site subjects with carcinoma of the oral cavity 19 (36.53%) are having more depression than the persons with carcinoma of tongue 7(13.46%), tonsil 5(9.61%), hypopharynx 5 (9.61%), larynx 3(5.76%), supraglottis 3 (5.76%), neck 3(5.76%), buccal mucosa 2 (3.84%), vocal cord 2 (3.84%), palate 2(3.84%), oropharynx 1 (1.92%).

Duration < 1 month Vs Hamilton Depression

Among the subjects who are receiving concurrent chemoradiation less than 1 month and presenting with no depression 51 (63.75%) are greater than subjects who are having depression 29 (36.25%), which is statistically significant with a P-value of 0.0012. In the case of subjects presented with depression, subjects presented with mild state 26 (50.90%) are more when compared with no depression 11 (21.56%), severe 7 (13.72%) and moderate state are 7 (13.72%).

Duration > 1 month Vs Hamilton Depression

Subjects who are on concurrent therapy for more than 1 month are having more depression 55 (68.75%) is greater than subjects who are not having depression 25 (31.25%), Which is statistically significant with a P-value of 0.0000. In the case of subjects having depression presented with mild state 32 (58.18%), depression are more when compared with no depression 9 (16.36%) moderate 7 (12.72%), and severe 7 (12.72%) depression.

And in the case of subjects who are receiving concurrent chemotherapy less than 1 month, are have less depression 29 (36.25%) rate compared to subjects receiving concurrent treatment greater than 1-month depression 55 (68.75%) treatment plan.

Gender Vs Hamilton Anxiety

In the assessment of anxiety, among head and neck carcinoma, patient males 67 (83.75%) are suffering with more anxiety when compared with females 13 (16.25%). In the case of males, Subjects suffering from mild anxiety 31 (46.26%) are more when compared with subjects having moderate 21 (31.34%) and severe 15 (22.38%) state of anxiety. In the case of females,

subjects having mild state 7 (53.84%) are more when compared with moderate 3 (23.07%) and severe state 3 (23.07%).

Substance Abuse Vs Hamilton Anxiety

Subjects who have the habit of substance abuse are more suffering from anxiety 53 (66.25%) when compare with subjects who don't abuse substances 27(33.75%), Which is statistically significant with a p-value of 0.0000. In the case of subjects who have the habit of substance abuse and anxiety, subjects who are in moderate 19 (35.84%) are more when compared with subjects who are in severe 18 (33.96%) and mild state 16 (30.18%). In the case of subjects who have are not having the habit of substance abuse and anxiety, subjects who are in mild state 22 (81.48%) are more when compared with subjects who are in moderate 5 (18.51%).

Tumor site Vs Hamilton Anxiety

When we assessed anxiety associated with tumor site, subjects with carcinoma of oral cavity 21 (42%) are having more anxiety than the persons with carcinoma of tongue 9 (18%), tonsil 3(6%), hypopharynx 3 (6%), oropharynx 3 (6%), buccal mucosa 2 (4%), palate 2(4%), supraglottis 2 (4%), vocal cord 2 (4%), larynx 1(2%), neck 1(2%), salivary gland 1 (2%).

Duration < 1 month Vs Hamilton Anxiety

Subjects who are on concurrent therapy for less than 1 month and not having anxiety are 51 (63.75%) is more than subjects who are having anxiety 29 (36.25%). In the case of a subject who is not having anxiety and presented with mild state 22 (43.13%) are more when compared with moderate 18 (35.29%) and severe 11 (21.56%) anxiety. In the case of subjects who are having anxiety presented in mild state 16 (55.17%) is more when compared with severe 7 (24.13%) and moderate state 6 (20.68%).

Duration > 1 month Vs Hamilton Anxiety

Subjects who are on concurrent therapy for more than 1 month are having more anxiety rate of 55 (68.75%) which is greater than subjects who are not having anxiety 25 (31.25%). In the case of subjects having anxiety presented with mild state 22 (40%) anxiety are more when compared with moderate 21 (38.18%) and severe 12 (21.81%) anxiety. In the case of subjects who are not having anxiety presented in mild state 16 (64%) is more when compared with severe 6 (24%) and moderate 3 (12%) state.

No statistically significant improvement was seen in the global quality of life, functional scale, and symptom scale, but there is observable variation in the individual components. There was some improvement in the physical and emotional function while the other three variables decreased post-treatment, including role performance, cognitive, and social function. It is likely due to post-treatment supportive care factors.

There was some improvement in the physical and emotional function while the other three variables decreased post-treatment, including role performance, cognitive, and social function. It is likely due to post-treatment supportive care factors.

Support and care should not only be provided for the prevention of complications and further progression of the disease but also to facilitate the management of pain, psychosocial instability and towards prevention of the loss of function after treatment.

HRQoL is significantly associated with survival in demographical, lifestyle, and clinical measures. This highlights the value of monitoring HRQoL in clinical practice to identify those patients that report changes in HRQoL at 6 months after treatment.

CONCLUSION

Based on our study results we conclude that the quality of life in head and neck cancer has significantly improved over a period of time. Educating the patients regarding lifestyle modifications and dietary restrictions has shown a great impact on the improvement of quality of life.

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REFERENCES:

- 1) Melo Filho MR de, Rocha BA, Pires MB de O, et al., Quality of life of patients with head and neck cancer. Braz J Otorhinolaryngol. PubMed.gov NIH. 2013 Jan- Feb; 79(1) : 82–88.

- 2) Weymuller EA Jr, Yueh B, Deleyiannis FWB, et al., Quality of life in patients with head and neck cancer. Arch Otolaryngol Head Neck Surg. PubMed.gov NIH. 2000;126(3): 329.
- 3) Sharma Y, Mishra G, Parikh V et al., Quality of life in head and neck cancer patients. Indian J Otolaryngol Head Neck Surg. PubMed.gov NIH . 2019 ; 71(Suppl 1): 927–32.
- 4) Majid A, Sayeed BZ, Khan M, et al., Assessment and improvement of quality of life in patients undergoing treatment for head and neck cancer. Cureus. PubMed.gov NIH.2017 May 2 ; 9(5) : 1215.
- 5) Vakharia KT, Ali MJ, Wang SJ et al., Quality-of-life impact of participation in a head and neck cancer support group. Otolaryngol Head Neck Surg. PubMed.gov NIH. 2007 Mar ;136(3) : 405–410.
- 6) Loimu V, Mäkitie AA, Bäck LJ, et al., Health-related quality of life of head and neck cancer patients with successful oncological treatment. Eur Arch Otorhinolaryngol . PubMed.gov NIH. 2015 Sep ;272(9) : 2415–2423.
- 7) Karimi AM, Gairola M, Ahlawat P, et al., Health-related quality of life assessment for head-and-neck cancer patients during and at 3 months after radiotherapy : A prospective, analytical questionnaire-based study. Natl J Maxillofac Surg.PubMed.gov NIH. 2019 Nov 12 ; 10(2) : 134-140.
- 8) Lohith et al., Impact of concurrent chemoradiation on quality of life in Indian patients with locally advanced head and neck cancers. J Clin Oncol. 2016 ;34(15_suppl).
- 9) Do Nascimento Santos Lima E, Ferreira IB, Lajolo PP, et al., Health-related quality of life became worse in short-term during treatment in head and neck cancer patients: a prospective study. Health Qual Life Outcomes. PubMed.gov NIH . 2020;18(1):307.
- 10) Bashir A, Kumar D, Dewan D, et al., Quality of life of head and neck cancer patients before and after cancer-directed treatment:A longitudinal study. J Cancer Res Ther. PubMed.gov NIH. 2020;16(3):500–507.
- 11) Funk GF, Karnell LH, Christensen AJ, et al., Long-term health-related quality of life in survivors of head and neck cancer. Arch Otolaryngol Head Neck Surg.Pubmed.gov NIH. 2012 Feb;138(2):123–133
- 12) Abendstein H, Nordgren M, Boysen M, et al., Quality of life and head and neck cancer: a 5-year prospective study. Laryngoscope. PubMed.gov NIH.2005;115(12):2183–2192.
- 13) Gomes EPA de A, Aranha AMF, Borges AH, et al., Head and neck cancer patient's Quality of life: Analysis of three instruments. J Dent (Shiraz). PubMed.gov NIH. 2020;21(1):31–41.
- 14) Nayak SG, Pai MS, George LS, et al., Quality of life of patients with head and neck cancer: A mixed-method study. J Cancer Res Ther.PubMed.gov NIH. 2019 Jul -Sep;15(3):638–644.
- 15) Singer S, Langendijk J, Yarom N, et al., Assessing and improving quality of life in patients with head and neck cancer. Am Soc Clin Oncol Educ Book. 2013;(33):230–235.
- 16) Van Nieuwenhuizen AJ, Buffart LM, Langendijk JA, et al., Health-related quality of life and overall survival: A prospective study in patients with head and neck cancer treated with radiotherapy. Qual Life Res. 2020 Dec 8. PubMed.gov NIH . Available from: <http://dx.doi.org/10.1007/s11136-020-02716-x>.
- 17) Liao L-J, Hsu W-L, Lo W-C, et al., Health-related quality of life and utility in head and neck cancer survivors. BMC Cancer. 2019 May 7 ;19(1): 425.
- 18) Onakoya PA, Nwaorgu OG, Adenipekun AO, et al., Quality of life in patients with head and neck cancers. J Natl Med Assoc.PubMed.gov NIH.2006;98(5): 765–770.
- 19) Carrillo JF, Carrillo LC, Ramirez-Ortega MC, et al., The impact of treatment on quality of life of patients with head and neck cancer and its association with prognosis. Eur J Surg Oncol.PubMed.gov NIH. 2016 Oct ;42(10):1614–1621.
- 20) Bilal S, Doss JG, Cella D, et al., Quality of life associated factors in head and neck cancer patients in a developing country using the FACT-H&N. J Craniomaxillofac Surg. PubMed.gov NIH. 2015;43(2):274–280.
- 21) Gritz ER, Carmack CL, De Moor C, et al., First year after head and neck cancer: quality of life. J Clin Oncol. 1999 Jan;17(1):352-360.
- 22) Hortense FTP, Bergerot CD, Domenico EBL et al., Quality of life, anxiety and depression in head and neck cancer patients: a randomized clinical trial. PubMed.gov NIH . 2020 Mar 27.
- 23) Calver L, Tickle A, Moghaddam N, et al., The effect of psychological interventions on quality of life in patients with head and neck cancer: A systematic review and meta-analysis. Eur J Cancer Care (Engl) .PubMed.gov NIH. 2018 Jan ; 27(1) : 12789.
- 24) Chaukar DA, Walvekar RR, Das A , et al., Quality of life in head and neck cancer survivors: a cross-sectional survey. Am J Otolaryngol. PubMed.gov NIH .2009 May- Jun ; 30(3) : 176–180.

- 25) Nayak SG, Pai MS, George LS, et al., Quality of life of patients with head and neck cancer: A mixed-method study. J Cancer Res Ther.PubMed.gov NIH. 2019 Jul -Sep; 15(3): 638–644.
- 26) Singer S, Langendijk J, Yarom N, et al., Assessing and improving quality of life in patients with head and neck cancer. Am Soc Clin Oncol Educ Book. 2013 ; (33) : 230–235.

