Original Article

EVALUATION OF THE QUALITY OF LIFE IN PATIENTS WITH ORAL SQUAMOUS CELL CARCINOMA

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ABSTRACT

Objective: *The purpose of this study is to evaluate the quality of life in a group of patients with oral squamous cell carcinoma with special focus on the influences of socio-demographics and symptomatology.*

Material and Methods: *The study was carried out at the Department of Oral and Maxillofacial Surgery, Khyber College of Dentistry Khyber Pakhtunkhwa, Peshawar from 1st June 2010 to 31 Dec 2011.One hundred and two patients with Oral squamous cell carcinoma of the oral cavity were evaluated in this study. For the collection of data, a specially designed Proforma based on European Organization of Research and Treatment of Cancer Quality of Life Core Questionnaire, version 3.0 was used containing functional and symptoms scales. The collected data and all relevant information were analysed using statistical package for social sciences version 17.0.*

Results: *The gender distribution of patients revealed that out of total 102 patients, 56 ((54.90%) were male while 46(45.10%) were female, mostly in age group 66-70 years (26.48%) followed by age group 56-60 years (22.55%). The educational level of these patients showed that most of them (71.57%) were illiterate followed by middle passed (15.69%). The socioeconomic status was poor in 55.88% patients. Clinical tumour staging was such that most of the patients were in Stage IV (42.17%) and Stage III (38.24%).*

The quality of life assessment revealed that, poor quality of life was observed mostly in female gender, above 60 years age group and Stage IV tumours. Patients with poor and satisfactory socioeconomic groups scored better on functional scales but scored high on symptoms scales. Poor functional scoring was observed in the good socioeconomic group.

Conclusion: *Advanced age of the patient, advanced tumour stage and poor socioeconomic status has a negative influence on QoL in patients with squamous cell carcinoma of the oral cavity. A more specific differentiation in this area of research is desirable and further prospective studies must explore this topic with larger patient sample.*

Keywords: *Quality of life, Oral squamous cell carcinoma, Maxillofacial surgery.*

INTRODUCTION

Squamous cell carcinoma is the most common cancer of head and neck region in Pakistan[1]. High incidence rates, i.e. 150/100,000, have been reported in Asia[1]. More than 90-95% of oral cancers are SCC or one of its variants[2]. The biological behaviour of oral SCC is uncertain. Many of these tumours have an aggressive biological behaviour in initial stages with early regional metastases and ultimate death. On the other hand, advanced tumours may metastasize slowly, and these patients may remain disease free for long periods[3].

Oral cancer can produce many different symptoms. Some of these symptoms affecting quality of life (QoL) are cancer type and stage, time since diagnosis, patient acceptance and intensity of the disease. Another important factor which can affect QoL is the level of psychological distress experienced by caregivers and family members[4].

The awareness of QoL in patients with head and neck tumours has raised recently[5,6,7]. Typical head and neck tumours treated by maxillofacial surgeons influence multiple functions, including respiration, food intake, speech, and socialization through aesthetic

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impairment[8]. Quality of life is a construct that is increasingly being used in the assessment of health status and the impact of therapeutic applications in patients with different diseases[9]. The QOL can be defined in broad terms as the individual's perception of his or her position in life, within the cultural context and value system he or she lives in, expectations, parameters and social relations[10].

Despite recent advances in diagnosis and treatment, oral cancer remains associated with disfigurement and dysfunctions that affect essential domains of life. The importance of assessing the self-reported evaluation of functional status and well-being of patients with cancer has been well documented in the literature[11].

The purpose of this study is to evaluate the quality of life in a group of patients with oral squamous cell carcinoma with special focus on the influences of socio-demographics and symptomatology.

METHODOLOGY

In this study, 102 patients with squamous cell carcinomas of the oral cavity were evaluated in the Department of Oral and Maxillofacial Surgery at Khyber College of Dentistry from 1st June 2010 to 31 Dec 2011.

The study was approved by the institutional ethics committee and all patients signed a written consent form. Patient having coexistent diseases, those treated with surgery or radiation therapy were excluded from this study.

The patient data were gathered including age, gender, level of education, and socioeconomic status (on the basis of monthly income). Clinical Tumour stage according to the TNM classification at the time of diagnosis was also recorded.

A specially designed Performa based on European Organization of Research and Treatment of Cancer Quality of Life Core Questionnaire, version 3.0 (EORTC QLQC30)[10] was used containing functional and symptoms scales. Functional scale consists of general health, bodily function, role functioning, emotional functioning and social functioning. The symptom scales contain pain, fatigue, xerostomia, loss of taste, difficulty in swallowing, difficulty in speech, dyspnea, sleep disorders, loss of appetite, gastrointestinal (G.I) disturbance and weight loss.

Individual items in functional scale and symptoms scale were assigned scores ranging from 1 to 5 and 1 to 4 respectively using visual analogue method[12]. A high score for a functional scale represents a relatively high/healthy level of functioning and quality of life, whereas a high score for a symptom scale represents a poor quality of life.

Data analysis was conducted using statistical package for social sciences (SPSS) version 17.

RESULTS

The gender distribution of patients revealed that out of total 102 patients, 56 (54.90%) were male while 46(45.10%) were female with a male to female ratio of 1.22:1.

Majority of the patients were in age group 66-70 years (26.48%) followed by age group 56-60 years (22.55%). The detail of age distribution is given in Table 1.

The educational level of these patients showed that most of them (71.57%) were illiterate followed by middle passed (15.69%). The distribution of educational level is given in Figure-1.

The socioeconomic status of 102 patients showed that 55.88% had poor socioeconomic status, 29.41% had satisfactory status and only 14.71% belonged to good socioeconomic status.

Clinical tumour staging showed that most of the patients were in stage IV (42.17%) and Stage III (38.24%). The distribution of tumour staging is given in Table-2.

Quality of life assessment revealed that, overall functional scale scoring was better for male gender (Averages = 11.5) as compared to female gender (Average = 9.10). The female gender demonstrated higher scores on symptoms scale (average 30.69 vs. 26.89 for males). The gender specific QoL is given in Table 3.

According to the age specific QoL evaluation, patients above the age of 60 years and those below the age of 60 years showed little difference on functional scale scoring (average 10.47 Vs. 10.36 respectively). However more symptoms were observed in patients above 60 years of age with an average scoring of 28.95. The distribution of age specific QoL is given in Table 4.

High functional scale score (18.5) was observed in Stage I tumours while high symptoms scale score was recorded for Stage IV tumours (37.86). The details are given in Table 5.

Patients with poor and satisfactory socioeconomic groups scored better on functional scales (average 10.77 and 10.5 respectively). These groups also scored high for symptoms scales (28.61 and 28.96)

Table 1: Age distribution (Range 38-82)

Age in years	Frequency	Percentage
35-40	2	1.96
41-45	5	4.90
46-50	7	6.86
51-55	11	10.78
56-60	23	22.55
61-65	21	20.59
66-70	27	26.48
71-75	4	3.92
76-80	1	0.98
81-85	1	0.98
Total	**102**	**100**

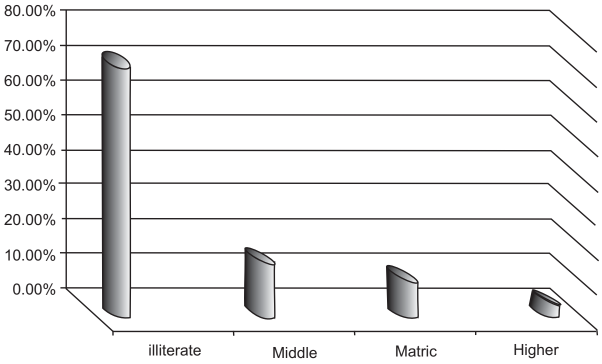

Fig. 1: Educational level

Table 2: Tumour stage

Tumour stage	Frequency	Percentage
Stage I	4	3.92
Stage II	16	15.67
Stage III	39	38.24
Stage IV	43	42.17
Total	**102**	**100**

Table 3: QoL and Gender distribution

Functional scale	**Male (n=56)**	**Female (n=46)**
General health	150	89
Bodily function	102	78
Role functioning	103	97
Emotional functioning	135	87
Social functioning	127	68
Total (average)	644 (11.5)	419 (9.10)
Symptoms scale		
Pain	131	110
Fatigue	135	106
Xerostomia	130	129
Loss of taste	126	117
Difficulty Swallowing	139	142
Difficulty speech	156	135
Dyspnea	101	150
Sleep disorders	135	131
Loss of appetite	133	117
G.I disturbance	155	108
Weight Loss	166	167
Total (average)	**1506 (26.89)**	**1412 (30.69)**

Table 4: QoL and Age distribution

Functional scale	**Above 60 years (n=55)**	**Below 60 years (n=74)**
General health	134	105
Bodily function	98	82
Role functioning103	125	102
Emotional functioning	135	87
Social functioning	100	95
Total (average)	576 (10.47)	487 (10.36)
Symptoms scale		
Pain	130	111
Fatigue	138	103
Xerostomia	144	115
Loss of taste	132	111
Difficulty Swallowing	158	123
Difficulty speech	157	134
Dyspnea	138	113
Sleep disorders	152	113
Loss of appetite	138	112
G.I disturbance	125	138
Weight Loss	180	153
Total (average)	**1592 (28395)**	**1326 (28.21)**

Table 5: QoL and Tumour stage

Functional scale	**Stage I (n=4)**	**Stage II (n=16)**	**Stage III (n=39)**	**Stage IV (n=43)**
General health	17	63	94	65
Bodily function	10	62	58	50
Role functioning	15	64	95	53
Emotional functioning	16	50	102	54
Social functioning	16	48	80	51
Total (average)	74 (18.5)	287 (17.93)	429 (11)	273 (6.34)
Symptoms scale				
Pain	4	16	79	142
Fatigue	4	36	100	101
Xerostomia	4	22	80	153
Loss of taste	4	16	59	164
Difficulty Swallowing	4	23	89	165
Difficulty speech	4	26	91	170
Dyspnea	7	42	89	113
Sleep disorders	4	26	87	148
Loss of appetite	4	22	71	153
G.I disturbance	4	19	91	149
Weight Loss	6	16	141	170
Total (average)	**49 (12.25)**	**264 (16.5)**	**977 (26.05)**	**1628 (37.86)**

but poor functional scoring (8.93) was observed in good socioeconomic group. The distribution is given in Table 6.

DISCUSSION

Determining how to measure and quantify the subjective experience of QoL has been a challenging issue and its assessment has become increasingly important in health care. Conventionally, the endpoints of medical care for cancer patients are usually focused on the so-called survival rate, local control rate, or complication rate. These endpoints were usually assessed from the physician's points of view which lacked knowledge and understanding of the patients' mental and emotional well-being. Quality of life studies in patients with oral cancer have achieved more importance as this tumour is one of the main causes of morbidity and mortality in Pakistan[13].

The gender specific results of the present study shows that majority of these patients are males (54.90%) in their age groups 56-70 years (49.23%). Similar findings were shown by Rana et al[13]. The reason is that male are more prone to the hazards of outdoor activities and are involved frequently in addictive behaviours like tobacco and paan use than the female counter part. Tumour diagnosis is usually made at an older age due to lack of education and awareness in this part of the world[14], the fact also reflected in our study i.e. large percentage of illiterate patients.

More than half of the study sample (55.88%) belonged to the poor socioeconomic group, which is not far from reality because Khyber Pakhtunkhwa is the second poorest province in Pakistan with an annual per capita income of Rs. 49,322 (Rs. 7,148 per month) for an average household size of about seven

Table 6: QoL and Socioeconomic status

Functional scale	**Poor (n=57)**	**Satisfactory (n=30)**	**Good (n=15)**
General health	136	70	33
Bodily function	107	50	23
Role functioning	133	65	29
Emotional functioning	126	70	26
Social functioning	112	60	23
Total (average)	614 (10.77)	315 (10.5)	134 (8.93)
Symptoms scale			
Pain	136	73	32
Fatigue	131	75	35
Xerostomia	144	75	40
Loss of taste	130	74	39
Difficulty Swallowing	125	83	40
Difficulty speech	164	90	37
Dyspnea	147	73	31
Sleep disorders	151	79	35
Loss of appetite	136	74	40
G.I disturbance	158	68	37
Weight Loss	176	104	53
Total (average)	**1631 (28.61)**	**868 (28.93)**	**419 (27.93)**

persons. This shows the gravity of poor socioeconomics in this region[15].

In this study 80.41% patients presented with stage III and stage IV. This is in agreement with the findings of Haq[16]. Lack of awareness, illiteracy, poverty, and unavailability of specialist services are some of the major causes of the high incidence and late diagnosis in Pakistan. There is general consensus that clinical stage at the time of diagnosis is the most important predictor of recurrence and death in oral cancer patients. The time to diagnosis is influenced by multiple clinical and sociodemographic variables, including patient reluctance to consult a health care professional due to lack of access that is all too common, especially in patients with low socioeconomic status, as well as professional delay in diagnosing and treating the disease.

From the gender aspect, the male group demonstrated higher scores for social functioning (10.5 vs. 9.10 for females). These findings show good compliance and hence better QoL for males as compared to females which are in contrast to the findings of Andrade[9] and Henson[17]. The reason being that heterogeneity exists in comparing study population and institutions where these studies were conducted. Also adjustments are made for major socio-demographic and medical variables that affect these measures. Female participants tended to rate worse (scored high) as compared to males on the symptoms scale (30.69 vs. 26.89) which is in agreement with the study of Mehanna[7]. It is well known that the prevalence of noxious symptoms like pain is higher in women than in men. Furthermore, most studies demonstrated that women report higher symptoms intensity and demonstrate lower pain threshold[18]. Another reason is that in countries like Pakistan and especially in Khyber Pakhtunkhwa province, a plausible assumption is that females willingly reveal their pain symptoms whereas males are not encouraged or even punished for expressing their symptoms[19].

Poor QoL was observed in our study in patients above 60 years of age both in terms of symptoms and functions. This phenomenon can be explained by the natural physical decline and poor tolerance to disease status in advanced age as explained by Cossio[20].

QoL was labelled as poor or good according to the tumour stage on presentation. In the present study, Poor QoL as indicated by low scores on functional scales and high scores on symptoms scales was recorded for Stage III and Stage IV tumours. Similar results were shown by a multi-centre study of 357 patients with head and neck tumours[21]. This can be explained by a decline in the general state of health through an advanced stage tumour; especially those in the posterior region can stimulate the emetic impulse, which can obstruct the passage of a bolus during swallowing and induce nausea and vomiting in this manner.

Many researchers around the world have shown that the QoL is negatively influenced by poor socio-economic status of patients[5,15,20]. Contrary to these studies, poor socioeconomic group in this study demonstrated high score on functional scales as compared to good socioeconomic group. The reason for this unusual finding may be that patients in poor socioeconomic group can adjust themselves according to unfavourable conditions and have more tolerance to social environment as compared to those in good socioeconomic status. A psychological influence of losing more out of a luxurious life in a morbid condition among good socioeconomic groups also cannot be ruled out. Although patients belonged to poor and middle socioeconomic groups scored high on symptoms scales. This may be the influence of other factors like lack of proper symptomatic treatment and affordability of facilities needed to combat such adverse conditions.

CONCLUSION

From the present study the following can be concluded:

1. Overall QoL is better for males as compared to females in terms of functional and symptoms scales.
2. Advanced age of the patient and advanced tumour stage are poor indicators of QoL in patients with squamous cell carcinoma.
3. Poor socioeconomics has a negative influence on QoL in terms of symptomatology while functional and social disabilities are observed in patients with good socioeconomic status.
4. A more specific differentiation in this area of research is desirable and further prospective studies must explore this topic with larger patient samples.

RECOMMENDATIONS

1. Quality of life assessment must be an integral portion of the patient care and multidisciplinary strategies must fulfil the patient's needs and expectations from the first consultation until all complications derived from the disease and treatment have been solved.
2. Future lines of work should be aimed not only at the control of the oral cancer, but also to a function and aesthetic improvement after treatment, as well as psychological support for the patient and family.

REFERENCES

1. Siddiquee BH, Alauddin M, Choudhry AA, Akhtar N. Head and neck squamous cell carcinoma: a 5 year study. Bangladesh Med Res Counc Bull. 2006; 32: 43-8.
2. Manuel S, Raghavan SKN, Pandey M, Sebastian P. Survival in patients under 45 years with squamous cell carcinoma of the oral tongue. Int J Oral Maxillofac Surg. 2003; 32: 167-73.
3. Layland MK, Sessions DG, Lenox J. The influence of lymph node metastasis in the treatment of squamous cell carcinoma of the oral cavity, oropharynx, larynx, and hypopharynx: No versus N+. Laryngoscope 2005; 115: 629-39.
4. De Cicco C, Trifirò G, Ferrari ME, Travaini LL, Calabrese L, Bruschini R et al. Lymphatic mapping to tailor selective lymphadenectomy in tongue carcinoma cN0: beyond the sentinel node concept. Eur J Nucl Med Mol Imaging 2006; 33: 900-5.
5. Infante-Cossio P, Torres-Carranza E, Cayuela A, Gutierrez-Perez JL, Gili- Miner M: Quality of life in patients with oral and oropharyngeal cancer. Int J Oral Maxillofac Surg. 2009; 38: 250-5.
6. Bjordal K, Hammerlid E, Ahlner-Elmqvist M, de Graeff A, Boysen M, Evensen JF et al. Quality of life in head

and neck cancer patients: validation of the European Organisation for Research and Treatment of Cancer Quality of Life questionnaire-H & N35. J Clin Oncol 1999; 17: 1008-19.

7. Mehanna HM, Morton RP. Deterioration in quality of life of late (10-year) survivors of head and neck cancer. Clin Otolaryngol 2006; 31: 204-11.

8. Oates J, Clark JR, Read J, Reeves N, Gao K, O'Brien CJ. Integration of prospective quality of life and nutritional assessment as routine components of multidisciplinary care of patients with head and neck cancer. ANZ J Surg. 2008; 78: 34-41.

9. Andrade FP, Antunes JLF, Durazzo MD. Evaluation of the quality of life of patients with oral cancer in Brazil. Braz Oral Res 2006; 20(4): 290-6.

10. Leung SW, Lee SF, Chien CY, Chao PJ, Tsai WL, Fang FM. Health related Quality of life in 640 head and neck cancer survivors after radiotherapy using EORTC QLQ-C30 and QLQ-H & N35 questionnaires. BMC Cancer 2011; 11: 128-37.

11. Ringash J, Bezjak A. A structured review of quality of life instruments for head and neck cancer patients. Head Neck 2001; 23: 201-13.

12. Wewers ME, Lowe NK. A critical review of visual analogue scales in the measurement of clinical phenomena. Research in Nursing and Health 1990; 13: 227-36.

13. Rana M, Iqbal A, Warraich R, Ruecker M, Eckardt AM, Gellrich NC. Modern surgical management of tongue carcinoma - A clinical retrospective research over a 12 years period. Head & Neck Oncology 2011; 3: 43-9.

14. Khyber Pakhtunkhwa in figures 2011. KPK Bureau of statistics. Available online from URL http://www.khyberpakhtunkhwa.gov.pk/Departments/BOS/nwfp-ind-education.

15. Khan M, Khan H, Rahim T, Shaukat S, Mohammad N. Remittances impact on socioeconomic development in NWFP, Pakistan. Sarhad J. Agric. 2010; 26(1): 125-33.

16. Haq MEU, Abid H, Hanif MK, Warraich RA, Mahmood HS, Saddique K. Frequency and pattern of oral squamous cell carcinomas. Annals 2009; 15(4): 171-5.

17. Henson BS, Inglehart MR, Eisbruch A, Ship JA. Preserved salivary output and xerostomia related quality of life in head and neck cancer patients receiving parotid sparing radiotherapy. Oral Oncol. 2001; 37(1): 84-93.

18. Herwig K. The effects of sex and gender role on responses to pressure pain. GMS Psycho-Social-Medicine 2012; 9: 1-9.

19. Farooqi YN, Chaudhry M. Depression and Anxiety Reported by Patients with Cancer of Breast and Uterus. International Journal of Humanities and Social Science 2012; 2(8): 188-93.

20. Cossio PI, Carranza ET, Cayuela A, Perez JLG, Miner MG. Quality of life in patients with oral and oropharyngeal cancer. Int J Oral Maxillofac Surg. 2009; 38: 250-5.

21. Rogers SN, Ahad SA, Murphy AP. A structured review and theme analysis of papers published on 'quality of life' in head and neck cancer: 2000-2005. Oral Oncol. 2007; 43: 843-68.