

Original Research Article

Filipino head and neck cancer patients and their quality of life

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ABSTRACT

Background: In the management of head and neck cancer (HNC), assessment of quality of life (QoL) is imperative because of the potentially debilitating effect of treatment toxicities. Currently, there are no published data assessing the QoL in Filipino HNC patients, thus this study.

Methods: This cross-sectional study utilized the University of the Philippines - Department of Health Quality of Life scale. Patients with head and neck cancers at the University of the Philippines - Philippine General Hospital from February to September 2019 were invited to participate.

Results: A total of 418 patients were included in the study with a mean age of 42 years old (range 18 to 73 years old). In general, Filipino head and neck cancer patients had moderate QoL (mean score of 4.59 ± 0.79). All of the QoL domains (physical, emotional, cognitive, and related functions) had a score of 3-5 (moderate), except for the social status domain which had a mean score of 5.51 ± 0.83 (high). Among socio-demographic factors, patients who are employed and with additional funding sources on top of their income have better global QoL ($p < 0.01$). Clinically, patients with higher stages of disease, fungating tumors, post-laryngectomy, have a feeding tube, with a tracheostomy, and had chemotherapy have lower global QoL ($p < 0.01$).

Conclusions: Filipino patients with head and neck cancers have an overall moderate quality of life, with high scores in the social domain. Patients with higher tumor burdens and have been exposed to chemotherapy have lower QoL scores, while patients with financial stability and aid have better QoL scores.

Keywords: Quality of life, Head and neck cancer, Filipino

INTRODUCTION

Head and neck cancer (HNC) is the 10th most common cancer in the world, and accounts for more than 0.5 million cases and 380,000 deaths annually.^{1,2} In the Philippines, there were more than 7,400 new HNC cases diagnosed in 2015 alone accounting for 6% of all cancers diagnosed on that year.³ The main risk factors associated with HNCs are cigarette (tobacco) smoking, alcoholic drinking, and infections such as human papillomavirus (HPV) and Epstein-Barr virus (EBV).

In today's age of oncologic advancements where treatment effectiveness is mainly measured through traditional endpoints such as over-all survival (OS) and progression-free survival (PFS) rates, the need for quality of life (QoL) data could not be overemphasized.⁴ In HNC management, assessment of QoL outcomes is especially important because of its potential impact on patients not only on their basic human functions such as talking, eating, and breathing, but also on their physical appearance, and their manner of communication.

A number of researches have studied QoL among HNC patients, and have concluded that demographic data, health behaviors, tumor and clinical characteristics, as well as treatment regimens have significant relationships to QoL.⁵⁻¹¹

In 1997, the University of the Philippines - Department of Health (UP-DOH) QoL scale was created and validated to be a culturally appropriate tool in measuring the QoL of Filipino cancer patients.¹² Unfortunately, there are presently no Filipino QoL studies using it as a tool probably because of the scarcity of QoL studies not only in the Philippines but worldwide.

Despite improvements in the survival rates of HNC patients with the advent of advances in oncologic treatment, oncologists should remember that QoL assessment is already considered to be an essential part of the general “wholistic” assessment and management of cancer patients.¹³⁻¹⁷ Likewise, oncologists should not forget the fact that patients may not have treatment benefits in terms of the previously mentioned traditional endpoints (OS and PFS), but it is still possible to see changes in their QoL.¹⁸⁻²⁴

This study aimed to identify clinical predictors of QoL in Filipino HNC patients. The data gathered can hopefully be used to facilitate delivery of the best possible quality of care to our Filipino HNC patients that can improve their QoL. Further studies can also be done to identify interventions that could uplift and maintain the highest possible QoL for these patients.

Objectives

General

This study aimed to identify clinical predictors of QoL in Filipino HNC patients.

Specific

Specifically, this study aimed to evaluate the QoL profile of Filipino HNC patients; to identify demographic factors that influence QoL in Filipino HNC patients and to investigate clinical disease variables that significantly impact QoL in Filipino HNC patients.

METHODS

Study design and setting

This was a cross-sectional analytical study. HNC patients seeking care at the Out-Patient clinics and In-Patient Wards of the Departments of Medical Oncology, Radiation Oncology, and Otorhinolaryngology of the University of the Philippines - Philippine General Hospital from January to June 2019 were invited to take part in the study. Data regarding QoL in Filipino HNC

patients were collected by using a survey (UP-DOH QOL scale) through convenience sampling.

Inclusion criteria

Patients with pathologically diagnosed HNC at any stage, regardless of the treatment regimens or phase they are in; should be at least 18 years old; able to read or comprehend Tagalog; willing to answer the survey were included.

Exclusion criteria

Pregnant patients, since nausea, vomiting, and fatigue maybe inherent in these population; patients with severe unstable psychiatric or mental conditions such as acute psychosis or dementia; refusal to answer the survey were excluded.

Survey questionnaire

The University of the Philippines (UP) Department of Epidemiology was commissioned by the Department of Health (DOH) (under the Philippine Cancer Control Program) to make a QoL scale for Filipinos. The UP-DOH QoL scale was developed in 1996, to be a culture-appropriate validated instrument to measure the QoL of Filipino cancer patients. Items are grouped into the following domains: physical wellness (13 items), emotional well-being (8 items), social status (3 items), cognitive status (5 items) and self-care or related functions (4 items).

The resulting mean score for the entire scale, represents the global QoL, and ranges from 1 to 7, where 1 referred as the lowest score and 7 to the highest QoL score. The higher the score, the better is the quality of life. For the interpretation of scores for each domain, the following scoring system can be used: a high QoL will have a mean score of 5.01-7.00, moderate QoL signifies a score of 3.01-5.00, and the QoL will be considered low when the is 1.00-3.00.²⁵

Statistical analysis

Descriptive statistics such as the mean and standard deviation were used. Frequency and percentages were also used for categorical data. A series of independent t-tests with Welch's correction and one-way analysis of variance were performed to determine if there was a significant difference in the baseline clinico-demographic variables between the study groups. A series of Spearman's rho rank correlation were performed to determine the association between overall QoL and the variables. Furthermore, multiple linear regression was performed with the overall QoL as the primary outcome - compared with the set of clinical and socio-demographic factors. Forward variable selection was utilized in the creation of the regression model. The level of significance for all sets of analysis was set at a p value

less than 0.05 using two-tailed comparisons. Multiple comparisons procedure using the Fisher-Hayter technique were used to determine differences between more than two groups from the one-way ANOVA. Data processing and analysis were carried out using the software Stata 13.

RESULTS

A total of 418 patients were included in the study with a median age of 42 years old (range: 18 to 73). The mean time from the diagnosis to the study interview was 11 months (SD±10.47 months, median of 9 months, maximum of 96 months); while the average from the time of surgery to data collection was 4 months (SD±9.88 months, median of 1 month, max of 120 months). The average tumor size noted in the study population was

about 4 centimeters (SD±2.01 centimeters, max of 13 cm). Further details of the socio-demographic characteristics of the participants across their QoL rating can be seen in Table 1.

It can be noted that employed patients have a better QoL than otherwise ($p<0.01$). Also, patients with other sources of health care financing on top of their personal savings have higher global QoL scores ($p<0.01$). Furthermore, patients with tumors in the thyroid gland, hypopharynx, and other sites (lymphoma, parotid gland, skin) have significantly higher ratings in their overall QoL as compared with patients who have tumors in the oropharynx and ethmoid sinuses ($p<0.01$). At the same time, patients with tumor stage 0 to 1 have significantly higher ratings than the other disease stages ($p<0.01$).

Table 1: Baseline characteristics of the study population.

Characteristics	Frequency (%)	Global QoL	P value
Gender			
Male	238 (56.94)	4.58±0.67	0.87
Female	180 (43.06)	4.59±0.92	
Marital status			
Single	11 (2.63)	4.88±0.45	0.07
With a partner	407 (97.37)	4.58±0.79	
Presence of support			
Family	388 (92.82)	4.57±0.79	0.07
Friends	11 (2.63)	4.79±0.83	
Both	13 (3.11)	4.58±0.62	
None	6 (1.44)	5.37±0.48	
Education level			
High school level	300 (71.77)	4.53±0.84	0.06
College level	100 (23.92)	4.71±0.63	
College graduate	18 (4.31)	4.84±0.61	
Employed			
Yes	176 (42.11)	4.78±0.61	<0.01*
No	242 (57.89)	4.45±0.87	
Breadwinner of family			
Yes	174 (41.63)	4.61±0.67	0.58
No	244 (58.37)	4.57±0.86	
Ownership of house			
Yes	166 (39.71)	4.63±0.80	0.40
No	252 (60.29)	4.56±0.78	
Source of finances			
Own savings/income	66 (15.79)	4.67±0.59	<0.01*
Philhealth	231 (55.26)	4.45±0.83	
Relatives	55 (13.16)	4.53±0.73	
Others	66 (15.79)	5.03±0.66	
Location			
Out-patient	294 (70.33)	4.56±0.79	0.34
In-patient	124 (29.67)	4.64±0.77	
Risk factors			
Smoking	84 (20.10)	4.58±0.97	0.60
Alcohol drinking	51 (12.20)	4.69±0.74	
Both	283 (67.70)	4.57±0.73	

Continued.

Characteristics	Frequency (%)	Global QoL	P value	
Tumor sites				
Oropharynx	19 (4.55)	4.29±0.75	<0.01*	
Hypopharynx	26 (6.22)	4.74±0.53		
Larynx	56 (13.40)	4.42±0.71		
Oral cavity	99 (23.68)	4.71±0.75		
Nasopharynx	148 (35.41)	4.44±0.82		
Thyroid	20 (4.78)	5.52±0.51		
Ethmoid sinus	12 (2.87)	3.76±0.54		
Maxillary sinus	16 (3.83)	4.61±0.65		
Others				
Lymphoma	5 (1.20)	5.11±0.47		
Parotid gland	6 (1.44)			
Skin	11 (2.64)			
Tumor stage				
0-1	16 (3.83)	5.21±0.62	<0.01*	
II	89 (21.29)	4.90±0.74		
III	163 (39)	4.51±0.57		
IV	150 (35.89)	4.42±0.94		
Fungating tumor appearance				
Yes	86 (20.57)	4.34±0.91	<0.01*	
No	332 (79.43)	4.65±0.74		
Procedures done				
Post-surgery (excluding laryngectomy)	229 (54.78)	4.85±0.66	<0.01*	
Post-neck dissection	200 (47.85)	4.79±0.66	<0.01*	
Post-laryngectomy	50 (11.96)	4.31±0.75	<0.01*	
Feeding tube insertion	94 (22.49)	3.83±0.82	<0.01*	
Tracheostomy placement	84 (20.10)	4.15±0.79	<0.01*	
None	146 (34.93)	4.82±0.80		
Radiation (ongoing/done)	42 (10.05)	5.14±0.46	<0.01*	
Chemo (ongoing/done)	22 (5.26)	4.17±1.13		
Chemo-RT (ongoing/done)	208 (49.76)	4.36±0.68		
Presence of comorbidities				
No other conditions	297 (71.05)	4.74±0.63	<0.01*	
Pulmonary conditions	48 (11.48)	3.90±0.62		
Cardiovascular conditions	21 (5.02)	4.35±0.88		
Stroke	7 (1.67)	3.64±0.65		
Diabetes	41 (9.81)	4.51±1.28		
Psychiatric problems	2 (0.48)	4.36±0		
Pertinent symptoms noted				
PAIN	288 (68.90)	4.32±0.75	<0.01*	
Median VAS score	2 (5) [0-10]	- 0.4871	<0.01*	
Problems with seeing	152 (36.36)	4.27±0.81	<0.01*	
Problems with feeding	315 (75.36)	4.39±0.76	<0.01*	
Problems with hearing	267 (63.88)	4.28±0.71	<0.01*	
Problems with taste	288 (68.90)	4.36±0.73	<0.01*	

*p<0.05, statistically significant.

Moreover, patients whose tumors have fungating appearance, are post-laryngectomy, have a feeding tube, and have a tracheostomy have lower QoL scores (p<0.01). Interestingly, patients who underwent surgery (excluding laryngectomy) and neck dissection have higher QoL scores (p<0.01). In terms of treatment, patients who received radiation or have not yet undergone

any treatment have higher QoL ratings as compared with those who received chemotherapy, and combined radiation and chemotherapy (p<0.01).

Based on the presence of other disease conditions, those who do not have any co-morbidities have higher overall QoL compared to those who have stroke or pulmonary conditions (e.g. asthma, COPD) (p<0.01).

Table 2: Multiple linear regression for the perceived quality of life across variables.

Predictors	Unadjusted measures		Adjusted measures	
	β (95% CI)	P value	β (95% CI)	P value
Clinical-related factors				
Age at interview (in years)	0.000 (-0.07 to 0.06)	0.91	0.006 (0.001 to 0.011)	0.03*
Time from diagnosis (months)	0.007 (0.001 to 0.014)	0.05*	0.006 (0.001 to 0.011)	0.02*
Risk factors				
Smoking	1.00		1.00	
Alcohol drinking	0.106 (-0.169 to 0.381)	0.45	0.217 (0.030 to 0.404)	0.02*
Both	-0.014 (-0.207 to 0.178)	0.88	0.264 (0.129 to 0.400)	<0.01*
Tumor sites				
Oropharynx	1.00		1.00	
Ethmoid sinus	-0.528 (-1.057 to 0.001)	0.05*	-0.582 (-0.945 to -0.219)	<0.01*
Maxillary sinus	0.324 (-0.162 to 0.811)	0.19	-0.390 (-0.734 to -0.047)	0.03*
Others	0.822 (0.373 to 1.271)	<0.01*	-0.335 (-0.675 to -0.002)	0.05*
Tumor stage				
0-I	1.00		1.00	
II	-0.310 (-0.715 to -0.094)	0.13	-0.219 (-0.547 to 0.110)	0.19
III	-0.699 (-1.090 to -0.309)	<0.01*	-0.229 (-0.534 to 0.075)	0.14
IV	-0.787 (-1.179 to -0.395)	<0.01*	-0.299 (-0.609 to 0.011)	0.06
Fungating appearance	-0.307 (-0.492 to -0.122)	<0.01*	0.109 (-0.054 to 0.272)	0.19
Procedures done				
Post-surgery	0.571 (0.429 to 0.713)	<0.01*	0.248 (0.005 to 0.490)	0.05*
Post-neck dissection	0.382 (0.235 to 0.529)	<0.01*	0.164 (-0.087 to 0.414)	0.20
Post-laryngectomy	-0.318 (-0.549 to -0.087)	<0.01*	-0.273 (-0.547 to 0.001)	0.05*
Feeding tube insertion	-0.982 (-1.137 to -0.828)	<0.01*	-0.612 (-0.754 to -0.47)	<0.01*
Tracheostomy	-0.541 (-0.723 to -0.360)	<0.01*	-0.471 (-0.712 to -0.23)	<0.01*
Intervention plan				
None	1.00		1.00	
Radiation (ongoing/done)	0.317 (0.065 to 0.569)	0.01*	-0.038 (-0.231 to 0.155)	0.70
Chemo (ongoing/done)	-0.651 (-0.980 to -0.322)	<0.01*	-0.119 (-0.361 to 0.123)	0.34
Chemo-RT (ongoing/done)	-0.466 (-0.622 to -0.311)	<0.01*	-0.040 (-0.180 to 0.100)	0.58
Presence of comorbidities				
No other conditions	1.00		1.00	
Pulmonary conditions	-0.844 (-1.068 to -0.621)	<0.01*	-0.216 (-0.394 to -0.038)	0.02*
Cardiovascular disease	-0.389 (-0.713 to -0.065)	0.02*	-0.275 (-0.504 to -0.045)	0.02*
Stroke	-1.103 (-1.652 to -0.554)	<0.01*	-0.788 (-1.214 to -0.363)	<0.01*
Diabetes	-0.229 (-0.469 to 0.010)	0.06	-0.271 (-0.437 to -0.104)	<0.01*
Pertinent symptoms noted				
Pain	-0.853 (-0.995 to -0.712)	<0.01*	-0.116 (-0.265 to 0.033)	0.13
VAS score for pain	-0.140 (-0.165 to -0.114)	<0.01*	-0.031 (-0.060 to -0.002)	0.04*
Problems with seeing	-0.492 (-0.641 to -0.341)	<0.01*	-0.036 (-0.177 to 0.106)	0.62
Problems with feeding	-0.789 (-0.947 to -0.630)	<0.01*	-0.069 (-0.211 to 0.073)	0.34
Problems with hearing	-0.843 (-0.978 to -0.708)	<0.01*	-0.396 (-0.541 to -0.252)	<0.01*
Problems with taste	-0.723 (-0.871 to -0.575)	<0.01*	-0.234 (-0.381 to -0.086)	<0.01*
Social-related factors				
Employed	0.337 (0.187 to 0.487)	<0.01*	0.134 (0.027 to 0.241)	0.02*
Source of finances				
Own savings or income	1.00		1.00	
Philhealth or insurance	-0.220 (-0.428 to -0.011)	0.04*	0.122 (-0.020 to 0.264)	0.09
Relatives	-0.143 (-0.416 to 0.130)	0.30	0.213 (0.018 to 0.408)	0.03*
Others	0.365 (0.104 to 0.625)	<0.01*	0.492 (0.320 to 0.663)	<0.01*

*p<0.05, statistically significant.

Patients who experience pain, problems with seeing, feeding, hearing, and tasting have lower perceived QoL ($p < 0.01$). At the same time, it can be said that there is a moderate negative relationship between VAS-measured pain score using the Spearman's rho rank correlation - suggesting that a higher degree of pain is associated with a lower quality of life. The patients' QoL has also been noted to increase as the time from surgery increases ($p < 0.01$) and is noted to decrease as the tumor size increases ($p < 0.01$). No correlation was noted between perceived QoL versus age and time from diagnosis.

The unadjusted measures of the linear regression suggest the contribution of select variables with the overall rating for the QoL such as the time from diagnosis, tumor site and stage, procedures performed, intervention plan, presence of pertinent symptoms; social support, level of education, employment and source of health care financing. However, an adjusted model to account for all the variables was developed with an adjusted R-squared of 73.19% ($p < 0.01$).

The results of the multiple linear regression (Table 2) accounting for all the variables considered are very much similar with the results in the previous table. It can be noted that those who were exposed to both smoking and alcoholic drinks had slightly better QoL than those who only had 1 risk factor. The contribution of age in years with the perceived QoL suggests that older patients have better QoL scores.

Table 3: Distribution of the perceived quality of life among the study population.

Scale	Summary measures
Global QoL score	4.59±0.79
Low	15 (3.59%)
Moderate	277 (66.27%)
High	126 (30.14%)
Physical domain	4.45±0.88
Low	25 (5.98%)
Moderate	274 (65.55%)
High	119 (28.47%)
Emotional domain	4.63±0.87
Low	24 (5.74%)
Moderate	276 (66.03%)
High	118 (28.23%)
Social status domain	5.51±0.83
Low	2 (0.48%)
Moderate	144 (34.45%)
High	272 (65.07%)
Cognitive domain	4.26±0.89
Low	39 (9.33%)
Moderate	314 (75.12%)
High	65 (15.55%)
Related functions domain	4.68±0.97
Low	23 (5.50%)
Moderate	264 (63.16%)
High	131 (31.34%)

Tumor sites at the ethmoid sinus, maxillary sinus, and other sites (lymphoma, parotid gland, skin) are associated with a significantly decreased QoL score. The presence of stroke and other cardiovascular conditions; and problems with hearing and taste - all appeared to also significantly reduce the perceived overall QoL among these patients. On the other hand, the presence of additional sources of health financing (on top of personal savings) and being employed significantly improve their perceived quality of life.

Overall, the global QoL score of the respondents was moderate (score= 4.59±0.79, Table 3). Also, most of the domains showed moderate QoL except for the Social Status domain which showed a high QoL (score= 5.51±0.83).

DISCUSSION

Demographic factors

In an estimate of Philippine cancer prevalence in 2015, although females were noted to have a higher number of cancer cases overall, pharyngeal and laryngeal cancers were expected to be more prevalent in males.²⁸ Similarly, the male-to-female ratio for head and neck squamous cell carcinomas was 7:3 in a single institutional retrospective report in the Philippines.²⁶ In our study, however, no significant difference between the number of males and females was noted. The median age at diagnosis of 42 years in our study was also younger than the 61.5 years reported by Albano et al.²⁶ This apparent shift in sex and age demography should be validated by a retrospective review of records of HNC patients in our institution.

Our study revealed that employed patients had a significantly better quality of life. Particularly for cancer survivors, QoL was reportedly higher among working patients, but employment-related QoL was reported to be poor in some studies.^{27,29,30} Categorizing patients into treatment status in future QoL surveys could further elucidate whether patient employment is indeed beneficial to QoL.

Sourcing finances from relatives and others were found to significantly improve patient QoL. Having Philhealth (the country's national insurance) coverage, on the other hand, did not appear to affect patient QoL positively. Whether these findings are related to out-of-pocket expenses incurred due to inadequacy of Philhealth coverage, and to the lessened financial burden by having external financial sources for these out-of-pocket expenses, are however outside the scope of this study and could be better addressed by studies on health economics.

Clinical factors

Our study showed that patients with tumors in the thyroid gland, hypopharynx, and other sites (lymph nodes, parotid gland, and skin) have significantly higher overall QoL as compared with patients whose tumors are in the

oropharynx and ethmoid sinuses. This is consistent with a similar Brazilian study which found that the presence of tumors in the tongue and pharynx is associated with poorer QoL.³¹ As compared to thyroid gland, parotid gland, and skin, the aerodigestive tracts (oral cavity, pharynx, and larynx) are the sites of function of hearing, swallowing, speech and breathing which are equally essential in social functioning.³² Hence, tumors affecting these vital areas are expected to cause negative impacts on the aforementioned basic functions.

Patients whose tumor stage is limited to 0 or 1 have significantly higher QoL ratings compared to more advanced stages. This is in harmony with previous findings that advanced HNCs produces the worst decline in QoL.^{33,35,36} It is presumed that the aggressiveness of the therapy produces these dismal findings.³³ Interestingly, another earlier study found no difference in QoL with advancing stage.³⁴

On the other hand, patients who have fungating tumor(s), are post-laryngectomy, have a feeding tube, and have a tracheostomy have lower QoL ratings. These findings are consistent with a similar American study which found that the presence of feeding tube, tracheostomy tube, and laryngectomy are strong clinical predictors of a poor QoL. Besides the physical alteration, the presence of these contraptions seem to remind the patients the presence of their disease despite the completion of cancer-directed treatments.³⁴

Surprisingly, patients who underwent surgery (excluding laryngectomy) and neck dissection have higher QoL ratings. Previous studies showed that laryngectomy is consistently related to a poorer QoL and surgery of primary site is related to a lesser magnitude of decline in QoL compared to chemotherapy and radiation. However, it is new that neck dissection is related to a better QoL. In a previous study, neck dissection in particular is implicated with worse QoL in the physical domain when compared to chemotherapy.³⁴ Studies that would investigate further the QoL of post-surgery patients with HNCs are therefore warranted.

We also found that patients who received radiation or have not undergone any treatment have higher QoL ratings compared with those who had chemotherapy or combined chemotherapy and radiation. This finding is similar with other studies found in the literature, with chemotherapy as the major predictor of a poor QoL.³⁴ The apparent negative impact of chemotherapy or combined chemotherapy and radiation may be due to the increase in nausea and vomiting, loss of appetite, constipation, and hearing loss which are considered classic sequelae of chemotherapy in the HNCs.³¹ In contrast, radiation therapy seems to have a more limited effect to QoL, primarily affecting only the 'eating domain'.³⁴⁻³⁶

Our study shows that patients who do not have comorbidities have higher overall QoL. This finding is

similar to a study done in China which showed that the presence of comorbidities in cancer patients was generally associated with lower QoL scores.³⁷

Furthermore, our study shows that patients who have persistent symptoms such as pain and those with problems with seeing, feeding, hearing, and tasting have a lower perceived quality of life. A study done in Brazil also had similar findings where the authors found out that the severity of pain directly affected the patients' QoL.³⁸

QoL was also noted to improve as the time from surgery increases and with increased age; and decrease as tumor size increases. These findings are similar to a study done in the US,³⁴ but unlike their results our study showed that patients who were exposed to both smoking and alcoholic drinks had slightly better QoL than those who only had 1 risk factor. The authors assume that those patients who are able to support two vices at the same time have more financial capacity and are well enough to still be able to smoke and drink -but a separate study exploring this association is suggested.

Global QoL

Overall, our study showed that the respondents had a moderate global QoL score. It is significant to note that although most of the domains show moderate QoL, the Social Status domain showed a high QoL. This can be explained by the fact that unlike other cultures, Filipino families are very much supportive of one another not only during times of celebration but also in difficult situations.³⁹ Culturally, Filipinos regard the family as a structure that provides love, comfort, and security. Its members are generally supportive of each other which may explain the high QoL levels in the social status domain.⁴⁰ It is the authors' desire that these Filipino values are maintained despite the changing times.

Limitations

The inherent characteristics of the cross-sectional design of this study is its major limitation.

CONCLUSION

Filipino patients with HNCs have an overall moderate quality of life, with high scores in the social domain. Patients with higher tumor burdens and have been exposed to chemotherapy have lower QoL scores, while patients with financial stability and aid have better QoL scores.

Recommendations

A prospective cohort study that could follow the patients' QoL scores from diagnosis until end of treatment is strongly suggested so that the patients' scores could be compared and see if the change in treatment phases are correlated with the QoL status.

Studies on how to decrease the toxicity of the chemotherapy regimens commonly used in treating head and neck Filipino cancer patients is strongly suggested. Since most chemotherapy dose algorithms that we currently follow are based from clinical trials done in other countries, a dose exploration study for Filipinos is suggested.

As this study shows a positive correlation to the patients' QoL, campaigns and programs to support funding of the treatment of Filipino HNC patients are recommended.

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