Original Article

HEALTH RELATED QUALITY OF LIFE OF THYROID CANCER PATIENTS

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ABSTRACT

Background: Having the longevity of thyroid cancer patients, any impairment in health-related quality of life (HRQOL) during the follow-up period is of great importance.

Objective: The study was conducted to determine the health related quality of life of thyroid cancer patients.

Material and methods: This cross sectional study was conducted among 246thyroid cancer patients. Data were collected by face-to-face interview and reviewing medical records with semi-structured questionnaire and checklist with validated scale. The subjects were purposively selected following specific selection criteria and maintaining ethical issues.

Place and period of study: The study was conducted during the period from July 2018-June 2019 in two tertiary hospitals of Dhaka city: Bangabandhu Sheikh Mujib Medical University and Dhaka Medical College Hospital, Dhaka.

Results: This study revealed that majority (74.4%) of respondents was female, married (72%), housewife (61.4%), rural respondent (41.1%) and had primary education (69%). Mean (± SD) age of the respondent was 37.85(±12.20) years (range 14-70 years) and mean (± SD) monthly family income was Tk.17681(±10602). Out of 246 cases, 204 (82.9%) was papillary and 42 (17.1%) was follicular carcinoma. Main presenting features were neck swelling (91.5%), swollen lymph node (41.9%), dysphonia (57.3%) and dysphagia (35.4%). Mean (± SD) of total HRQOL score was 73.7 ± 8.39. HRQOL score of students and higher educated patients were better among the respective groups (p <.001). The study showed the association of HRQOL with clinical condition of thyroid cancer patients (R2=.025). HRQOL revealed the strong prediction with education (β=-0.888, p<.05), family income (β=0.05, p<.05), marital status (β=-0.1.384, p<.05), clinical condition (β=-0.522, p<.05) and perceived stress (β=-0.632, p<.001).

Conclusion: The overall HRQOL score was considerably good in this study. Timely detection, regular motivation and attending clinical condition may significantly improve the HRQOL of thyroid cancer patients

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Key words: HRQOL, Thyroid Cancer Patient, Clinical Attributes.

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INTRODUCTION

Thyroid cancer is accounting for 92% of all endocrine malignancies[1] Incidence continues to rise worldwide due to increased diagnostic facilities and surveillance.[2] Annually it varies from 0.5 to 10 per 100,000 population. The survival rate of people with thyroid cancer is 98% for 5 years.[3] In USA, about17,000 new cases of thyroid cancer are diagnosed annually and deaths is about 1300.[4] It is the fifth most common cancer in women in USA.[5] Thyroid cancer occurs in the 3rd and 4th decade of life.[4]

Survival is the main outcome measure in oncology patients but recently it has been recognized that the diagnosis and management have a major effect on HRQOL of a cancer patient. The aim of cancer

treatment became not only to increase survival but also to preserve HRQOL and measuring these changes has been considered to be of paramount importance.[6]

The prevalence of thyroid cancer is increasing as a consequence of rising incidence, young age at diagnosis and excellent survival. Majority of the patients will live for many years with the consequences of treatment and follow-up, so their long-term quality of life becomes of great importance. After surgery, most of the patients will receive long-term thyroid hormones to decrease the risk of recurrence. Therefore, HRQOL might be affected by side-effects from thyroid hormones.[7] Health related quality of life refers to a multidimensional concept that encompasses perception of negative and positive aspects of physical, emotional, social, and cognitive functions, which could be affected by the disease or its treatment.[8]

Until recently, measurement of treatment efficacy depends on the overall survival in evaluating the treatment of malignant tumors. Large numbers of cancer patients are now surviving for many years with improved early detection and treatment and has heightened interest in studying long-term effects of cancer on HRQOL.[9]

Incidence of thyroid cancer in Bangladesh is not known exactly but in one study at INM & thyroid clinic in BSMMU Dhaka reviewed 2629 thyroid patients from January 1994 to June 1995, and found prevalence of thyroid carcinoma 2.58%.[10]

Assessment of HRQOL and its contributing factors are important in the management of thyroid cancer patients because early identification may help to implement appropriate intervention to those with poor HRQOL. In Bangladesh no significant study was done about HRQOL of thyroid cancer patients. This study was conducted to determine the HRQOL of thyroid cancer patients for contributing profound academic and policy implications in detection of the magnitude of problem and to take necessary steps to provide economic and infrastructural support to reduce the burden of the disease.

MATERIALS AND METHODS

A cross sectional study was explored among 246

purposively selected thyroid cancer patients who were diagnosed by expert Oncologist with considering the histopathological report and were being followed in Institute of Nuclear Medicine and Allied Science of Bangabandhu Sheikh Mujib Medical University (BSMMU) and Dhaka Medical College Hospital (DMCH) from 01 July 2018 to 30 June 2019. FACT-G (version 4), 1127-item compilation of general questions was used to determine HRQOL of thyroid cancer patients in which the scored items employed a Likert-type format (0 to 4 “not at all to very much”). FACT-G scored was calculated by summing the individual scale scores and the total score was0-108, with higher scores indicating better quality of life. There were 7 items for assessing the clinical attributes of thyroid cancer patients and this assessment was done by employing a Likert-type format (not at all, a little, quite a bit, very much). After pretesting, the questionnaire was finalized and used for data collection. Informed written consent of each respondent was obtained before data collection. After explaining the purpose of the study, data were collected by face to face interview using a semi-structured questionnaire and checklist through reviewing medical records of the respective participants. Collected Data was analyzed with the help of Statistical Package of Social Science (SPSS) version 23. Data were presented in frequency tables and diagram to identify the distribution and clinical characteristics of the disease.

RESULTS

Out of total 246 thyroid cancer patients, majority (50.4%) were 30-49 years old with a range of 14-70 years and the mean (±SD) age was 37.85±12.20 years. Most of the thyroid cancer patients i.e. 74.4% were female and male female ratio was 1:3. Study revealed that 72% respondent was married, 61.4% were house wife, and 41.1% were from rural area. Around 28% had primary education while 20.7% were illiterate and average monthly family income was Tk. 17681 ±10602 (Table 1).

Table 1: Distribution of thyroid cancer by socio-demographic character (n=246)

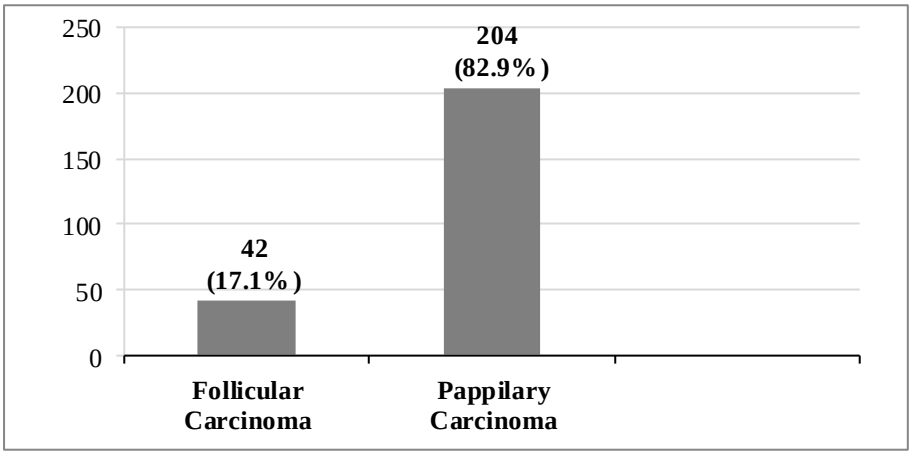
Attributes	**Findings**
Age (Years)	14-19: 63(25.6%), 20-29: 54(22%), 30-49: 124(50.4), 50-70: 55(22.4%)
Gender	Male: 63(25.6%), Female: 183(74.4%)

Table 1: Distribution of thyroid cancer by socio-demographic character (n=246)

Attributes	**Findings**
Marital status	Married: 177(72 %%), Unmarried: 32(13%) Widow:27(11%) Divoce:10(4.1%)
Education	Illiterate: 51(20.7%), Primary: 69(28%), Secondary: 27(11%), SSC: 38(15.4%) HSC: 25(10.2%), Graduate: 21(8.5%), Masters: 15(6.1%), Illiterate: 51(20.7%)
Occupation	Students: 14(5.7%), Unemployed: 11(4.5%) Farmer: 7(2.8%), Business: 19(7.7%) Service holder: 35(14.2%) Day laborer: 5(2.0%) Retired: 4(1.6%)
Monthly family income	Tk. 5000-10,000: 89(36.2%), Tk.10001-20000: 109(44.3%), Tk. 20001-30000: 24(9.8%), Tk. 30001-60,000: 24(9.8%), Mean monthly family income: Tk. 17681 ±10602
Place of residence	Rural: 101(41.1%) Urban: 72(29.3%) Peri-urban: 73(29.7%)

The most frequent thyroid cancer found in this study was papillary carcinoma 204 (82.9%) followed by follicular carcinoma 42 (17.1%) (Figure 1).

Figure 1: Distribution of patients by type of thyroid cancer (n=246)



Most common presentation of study participants was visible neck swelling in 225 (91.5%), swollen lymph node in 103 (41.9%), pain in 90 (36.6%), difficulties in swallowing in 87 (35.4%), Hoarseness of voice in 141 (57.3%), cough along with swelling in 47(19.1%) and difficulties in breathing in 13 (5.3%) of the patients (Table 2).

Table 2: Distribution of thyroid cancer patients by clinical attributes (n=246)

Attributes	Not at all f (%)	A little f (%)	Quite a bit f (%)	Very much f (%)	Total f (%)
Visible lump in neck	21(8.5%)	146(59.3)	68(27.6)	11(4.5)	100
Swollen lymph node	143(58.1)	98(39.8)	5(2.0)	0(00)	100
Pain due to lump	156(63.4)	82(33.3)	8(3.3)	0(00)	100
Difficulties in swallowing	159(64.6)	77(31.3)	10(4.1)	0(00)	100
Hoarseness of voice	105(42.7)	98(39.8)	43(17.5)	0(00)	100
Cough along with swelling	199(80.9)	47(19.1)	0(00)	0(00)	100
Breathlessness due to lump	233(94.7)	13(5.3)	0(00)	0(00)	100

The overall score of total HRQOL and its domains were presented in (Table 3). Among the respondents, mean ± SD of total HRQOL score was (73.7 ± 8.39). Among domains, mean ± SD score was highest in Physical Well-Being (PWB) (22.07 ± 3.87) and lowest in Functional Well-Being (FWB) 18.65 ± 4.17(Table 3).

Table 3: Distribution of patients by mean score of HRQOL and domain (n=246)

Attributes	Maximum Score	Mean ± SD	Median	Range
Physical Well-Being (PWB)	28	22.07 ± 3.87	22	12-28
Social Well-Being (SWB)	28	19.26 ± 3.62	20	10-28
Emotional Well-Being (EWB)	24	26.5 ± 2.97	19	10-24
Functional Well-Being (FWB)	28	18.65 ± 4.17	14	5-28
Total HRQOL	108	73.7 ± 8.39	74	49-102

Mean ± SD of the HRQOL score of students 77.86±8.484 and graduates 76.90±8.300 which were highest among the respective groups and were statistically significant (p <.001) (Table 4).

Table 4: Comparison of mean score of HRQOL by selected socio-demographic characters (n=246)

Attributes	n=246	Mean ± SD of HRQOL	Significance
Occupation			
Student	14	77.86±8.484	
Service	35	72.11±9.508	
Retired	4	69.00±4.243	(Test Value=.023)
Business	19	77.68±7.754	F=2.370
Farming	7	68.29±5.908	df=7
Housewife	151	73.65±8.358	P < .05
Unemployed	11	75.18±4.708	
Day labor	5	67.80±4.025	
Education			
Illiterate	51	70.69±6.386	
Primary	69	73.25±8.806	
Secondary	27	74.81±8.298	(Test Value=.027
SSC (Pass)	38	73.66±9.356	F=2.418
HSC (Pass)	25	76.88±8.217	df=6
Graduate	21	76.90±8.300	P < .05
Masters	15	74.40±8.096	

The study showed the association of HRQOL with clinical condition of thyroid cancer patients (R2=.025) (Figure 2).

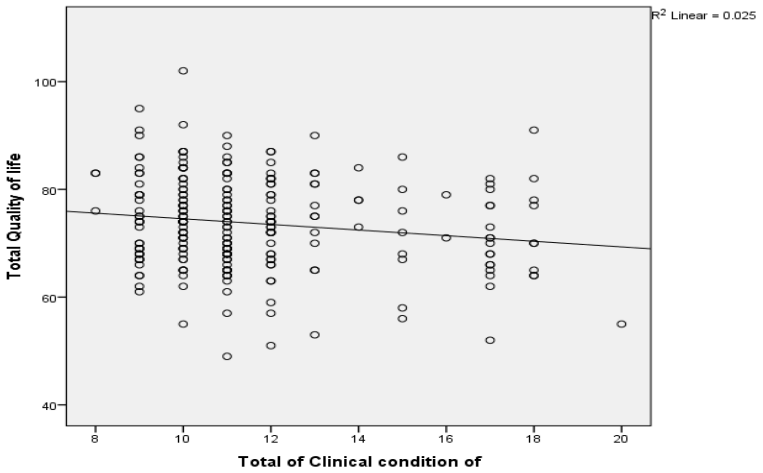


Figure 2: Linear regression analyses between clinical condition score and HRQOL score (n=246)

Table 5: Multiple regression analysis of predictors of HRQOL among thyroid cancer patients

Predictor	B	SE	r	R	R^2	Significance
Perceived stress	-.632	.124	-.310	.093	9.3%	Test results=.000 p < .001
Clinical Condition	-.522	.209	-.158	.021	2.1%	Test results=.013 p < .05
Family Income	.000	.000	.149	.018	1.8%	Test results=.019 p < .05
Marital Status	-1.384	.629	.140	.015	1.5%	Test results=.029 p < .05
Education	.888	.286	.195	.038	3.8%	Test results=.002 p < .05

The significant factors influencing health related quality of life of thyroid cancer were education (β=-0.888, p<.05), family income (β=0.05, p<.05), marital status (β=-0.1.384, p<.05), clinical condition(β=-0.522, p<.05) and perceived stress(β=-0.632, p<.001) (Table 5).

DISCUSSION

This cross-sectional study was conducted among 246 thyroid cancer patients. The mean±SD age of participants was 37.85±12.20 years and the highest frequency 124 (50.4%) was in between 30-49 years with a range of 14-70 years which is similar to other studies (Table 1).[12,13] Male were 63(25.6%) and female were 183 (74.4%) and male female ratio was 1:3(Table1). Females are more in numbers probably due to the roles of hormones. Findings are consistent with the study by Haque GHMS[14] may be due to same geographical location.

Out of all respondents, 20.7% were illiterate, and 28% had primary level education. Present data supports the national statistics where literacy rate was shown as 72.8 % .[18]In respect of occupation, respondent were mostly (61.4%) house wife. Among the respondents, 72% were married, 13% were unmarried, and others were in different strata (Table 1). A study Tagayet al[15] showed the similar results with this study. According to the Bangladesh demographic and health service data, the usual age at marriage for male is 23.8 years and female is 18.5 years.[16]

Among the respondents, majority i.e. 44.3% had monthly family income Tk. 10001-20000.The mean (±SD) of monthly family income was Tk. 17681 ±10602 (Table 1). Household income per month is 15,945.00 BDT which was reported to CEIC- a global data base organization by Bangladesh Bureau of Statistic.[17]

Off the all, majority i.e. 41.1% were from rural followed by 29.3% were urban and 29.7% from peri-urban areas. According to demographic and health service profile, the percentage of urban population is 35.8% (Table 1).[18]

This study revealed that most (82.9%) of the respondents had papillary carcinoma and 17.1% had follicular carcinoma (Figure 1). The similar result was found in Merchant[19] where papillary carcinoma was 80% and follicular carcinoma was 10%. This similarity was probably due to study design (Figure 1).

Regarding presenting complaints, visible lump in the neck were (92%) (Table 2) which showed the similar result in Pramod.[20] This similarity was probably due to the food habit, socio- economic and environmental condition of this sub continent (Table 2). Lymph node swelling of the respondent was (41.8%) which revealed the similar results in kannan[21] (Table 2). Majority (63.4%) of the respondents did not complain of pain due to lump which was not similar in Haque.[22] Maximum (64.6%) of the respondents had complained of difficulties in swallowing due to lump (Table 2). This did not correlate with the study Merchant[23] where it shown 16.4% of sufferings probably due to dissimilarity of study design. Most of the respondents (57.3%) complained of hoarseness of voice in this study (Table 2). Study findings disagree with Merchant23 which showed 20% of sufferings. Respondents (5.3%) did not complain of difficulties

in breathing which were similar to Chidambaram[24] (Table 2). This similarity was probably due to the same characteristics in geographical location of this sub continent.

Among the respondents, mean ± SD of total HRQOL score was (73.7 ± 8.39). Among domains, mean ± SD score was highest in Physical Well-Being (PWB) (22.07 ± 3.87) and lowest in Functional Well-Being (FWB) 18.65 ± 4.17(Table 3). cMean score of PWB and SWB were higher among the other domain which altogether may be the fact that people got much information about the disease process and its consequences and took the medical support to cure them and to maintain a healthy life. In the present study, student and graduate personal tended to have higher HRQOL scores which depicted the similar result by Rukshani[25] due to higher awareness of disease conditions, side effects of drugs and treatments (Table 4).

The study showed the association of HRQOL with clinical condition of thyroid cancer patients (R2=.025) (Figure 2). Selected variables income, marital status, education, clinical condition and perceived stress emerged as strongest predictor for determinants of HRQOL in multiple regression analysis (Table 5). All had negative influence on HRQOL except education which was positive influence on HRQOL. In a study, Lee[25] observed marital status, education; financial status had impact on HRQOL. Although this study was performed with small sample size in two tertiary level hospitals but still it provides a base for the future study with large sample size involving wider area representing demographics of the country.

CONCLUSION

HRQOL of thyroid cancer patient's specially physical and social well-being were better in this study and student and graduate personal tended to have the higher HRQOL scores. The study showed the association of HRQOL with clinical condition of thyroid cancer patients. HRQOL had emerged strong prediction with income, marital status, education, clinical condition and perceived stress of thyroid cancer patients. Regular motivation, educational awareness and timely clinical intervention may further improve the quality of life of thyroid cancer patients.

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