

Socio-demographic and Clinical Characteristics of Patient with Thyroid Cancer

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ABSTRACT

Background: Thyroid cancer is the most common malignant disease in endocrine system. It is an emerging public health issue associated with burden on the family, community and the nation. The aim of this study is to determine the socio-demographic and clinical characteristics of patient with thyroid cancer attending in tertiary hospital.

Methods: This cross sectional study was conducted among 246 thyroid cancer patients in two tertiary hospitals of Dhaka city from 01 July 2018 to 30 June 2019. The subjects were selected purposively following specific selection criteria and maintaining ethical issues. Data were collected by face to face interview using a semi-structured questionnaire and checklist. Data were analyzed by the statistical package for the social science (SPSS) version 23.

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 (\pm SD) age of the respondent was 37.85(\pm 12.20) years (Range 14-70 years) and mean (\pm SD) monthly family income was Tk. 17681(\pm 10602). Out of 246 cases, 204 (82.9%) was papillary and 42 (17.1%) was follicular carcinoma. Various clinical presentations included visible neck swelling in 225 (91.5%), swollen lymph node in 103 (41.9%), pain 90 (36.6%), Difficulties in swallowing 87 (35.4%), Hoarseness of voice in 141 (57.3%), cough along with swelling 47(19.1%), Difficulties in breathing due to swelling in 13(5.3%) of the patients.

Conclusion: Incidence of thyroid cancer has increased worldwide specially in female patients in 3rd and 4th decades of life. As thyroid cancer is a growing public health problem in Bangladesh, proper screening and early diagnostic facilities at all level should be available to measure its actual burden in the country.

Key Words: Socio-demographic, Clinical characteristics, Thyroid cancer

Introduction

Thyroid cancer is the common endocrine cancer accounting for 92% of all endocrine malignancies which represents less than 1% of all malignant tumors.¹ Due to increased use of diagnostic imaging and surveillance, incidence of thyroid cancer continues to rise worldwide especially in female patients.² Females are more affected than males.³ Incidence of thyroid cancer varies worldwide from 0.5 to 10 per 100,000 population annually.⁴ In 2019, about 2,170 deaths (1,020 men

and 1,150 women) from this disease will occur. The 5-year survival rate for people with thyroid cancer is 98%.⁵

Depending on the histological subtype, thyroid carcinoma has a tendency to metastasize to other parts of the body.⁶ About 4-7% of the population thyroid nodules and only 5-6.5% of these nodules are malignant.⁷ 17,000 new cases of thyroid cancer are diagnosed in the United States of America (USA) annually and thyroid cancer-related deaths is

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about 1300 .8 In USA, it is the fifth most common cancer in women, and over 62 000 new cases occurred in men and women in 2015.⁹ It is estimated approximately 40 cases per million people per year in USA.¹⁰ With appropriate diagnostic approach and proper treatment, the survival rate of thyroid cancer is very high.⁸ 60-70% of all thyroid cancers in adults is Papillary carcinoma and 70% of those found in children.¹⁰ Peak incidence of thyroid cancer in the 3rd and 4th decade of life.⁸ Prognosis depends upon age, sex, tumor stage, histological type and initial treatment. 11

Exact incidence of thyroid cancer in Bangladesh is not known. 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%.¹²

Little information is available regarding the demographic presentation and clinical characteristics of thyroid cancer patients in Bangladesh. This study was conducted to determine the socio-demographic and clinical characteristics among thyroid cancer patients which will subsequently help the government and relevant organizations to take necessary steps to provide economic and infrastructural support to reduce the burden of the disease.

Materials and Methods

A descriptive type cross sectional study was explored among 246 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. 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

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. The data were presented in frequency tables and diagram to identify the distribution and clinical characteristics of the disease.

Results

The distribution of thyroid cancer by socio-demographic and clinical characteristics shows that the mean \pm SD age of participants was 37.85 \pm 12.20 years with a range of 14-70 years. Majority (50.4%) respondent's age was in between 30 to 49 years. Most of the thyroid cancer patients i.e. 74.4% were female and male female ratio was 1:3. In respect of education, majority (28.0%) had primary education while 20.7% were illiterate. Study revealed that 72% respondent was married, 61.4% were house wife, and 41.1% were from rural area. Average monthly family income was TK. 17681 \pm 10602 and majority (44.3%) had monthly family income TK. 10001-20000 (Table-I).

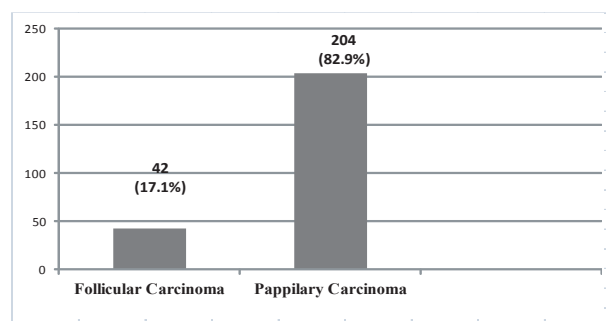
The most frequent thyroid cancer found in this study was papillary carcinoma 204 (82.9%) followed by follicular carcinoma 42 (17.1%) (Figure-I).

Papillary thyroid carcinoma was common in both males 58 (92.1%) and females 146(79.8%) respectively followed by follicular carcinoma in males 5 (7.9%) and female 37(20.2%) (Table-II).

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-III).

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

Attributes	Category	Frequency (%)	
	Sex Male	63(25.6)	
	Female	183(74.4)	
Age(Years)	14-19	13(5.3)	
	20-29	54(22.0)	
	30-49	124(50.4)	
	50-70	55(22.4)	
Education	Primary	69(28.0)	
	Secondary	27(11.0)	
	SSC	38(15.4)	
	HSC	25(10.2)	
	Graduate	21(8.5)	
	Masters	15(6.1)	
	Illiterate	51(20.7)	
Occupation	Student	14(5.7)	
	Service Holder	35(14.2)	
	Retired	4(1.6)	
	Business	19(7.7)	
	Farming	7(2.8)	
	Housewife	151(61.4)	
	Unemployed	11(4.5)	
	Day labor	5(2.0)	
	Marital Status	Married	177(72.0)
		Unmarried	32(13.0)
Widow		27(11.0)	
Divorce		10(4.1)	
Monthly Family Income (Taka)	5000-10,000	89(36.2)	
	10,001 - 20,000	109(44.3)	
	20,001 - 30,000	24(9.8)	
	30,001 -60,000	24(9.8)	
Residential Area	Urban	72(29.3)	
	Rural	101(41.1)	
	Sub Urban	73(29.7)	

**Figure I:** Distribution of patients by type of thyroid cancer (n=246)**Table II:** Distribution of gender of the patients by type of thyroid cancer by (n=246)

Attributes	Type of Cancer		Total
	Papillary	Follicular	
Male	58(92.1%)	5(7.9%)	63(100.0%)
Female	146(79.8%)	37(20.2%)	183(100.0%)

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

Attributes	Not at all	A little	Quite a bit	Very much	Total
	f(%)	f(%)	f(%)	f(%)	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

Discussion

In this study, the mean \pm 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-I)^{13,14} Male were 63(25.6%) and female were 183(74.4%) and male female ratio is 1:3. Females are more in numbers probably due to the roles of hormones. A study conducted by Haque GHMS¹⁵ in Bangladesh revealed the similar results with the present study may be due to geographical location of study place.

In this study, majority of the thyroid cancer patients i.e. 28.0% had primary education while 20.7% were illiterate (Table-I). Present data supports the national statistics where literacy rate was shown as 72.8%.¹⁶ In the present study, mean \pm SD monthly family income was TK. 17681 ± 10602 with minimum TK. 5000 and maximum TK. 60000. Majority (44.3%) had monthly income TK.10001-20000 (Table-I). 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 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-I). A study Tagay *et al.*¹⁸ 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.¹⁹

In the present study, 41.1% were from rural participants, 29.7% were sub-urban and 29.3% were urban (Table-I). According to demographic and health service profile, the percentage of urban population is 35.8%.¹⁹

This study revealed, most (82.9%) of the respondents were papillary carcinoma and 17.1% were follicular carcinoma (Figure-I). The similar result was found in Merchant²⁰ where papillary carcinoma was 80% and follicular carcinoma was 10%. This similarity was probably due to study design.

Papillary thyroid carcinoma was common in both males 58 (92.1%) and females 146(79.8%) respectively followed by follicular carcinoma in males 5 (7.9%) and female 37(20.2%) (Table-II). Regarding presenting complaints, visible lump in the neck were (92%) (Table-III) which showed the similar result in Pramod.²¹ This similarity was probably due to the food habit, socio- economic and environmental condition of this sub continent.

Lymph node swelling of the respondent was (41.8%) in this study which revealed the similar results in kannan (Table-III).²² Majority (63.4%) of the respondents did not complain of pain due to lump which was not similar in Haque.²³ Maximum (64.6%) of the respondents had complained of difficulties in swallowing due to lump (Table-III). This did not correlate with the study Merchant²¹ 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-III). Study findings disagree with Merchant²¹ which showed 20% of sufferings. Respondents (5.3%) did not complain of difficulties in breathing which were similar to Chidambaram²⁴ (Table-III). This similarity was probably due to the same characteristics in geographical location of this sub continent.

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

Thyroid carcinoma was found mostly in the females in 3rd and 4th decades of life. Papillary carcinoma was common histological type of thyroid carcinoma both in males and females. The most common presentation of thyroid cancer patients was mass in anterior neck, cervical lymphadenopathy, dyspnea, hoarseness of voice and dysphagia.

Recommendations

Thyroid cancer patients should be regularly screened for early diagnosis, specific protection and proper treatment at primary and secondary level of health system. Awareness program should be initiated by promoting health education, healthy life style and behaviors using mass media and social network. Comprehensive wide scale research work should be carried out to focus on pragmatic scenario of thyroid cancer and to undertake effectual ascendency accordingly.

Limitations

Due to resource constraints and availability of eligible patients, the study was conducted in two specialized hospital with limited sample size. If it could be conducted in more hospitals it would have been more valid. It was challenging to motivate the attendance of the patients to collect required information.

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