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Evaluation of Thyroid Disorders in Clinical Practices

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Abstract **Original Research Article**

Background: Thyroid disorders are one of the most common endocrine disorders encountered in the South-East Asian region. The study aimed to evaluate the thyroid disorders in clinical practices. ***Methodology:*** This was a prospective cross-sectional study was conducted in the Department of Medicine, Mainamoti Medical College Hospital, Cumilla, Bangladesh during the period from January 2020 to July 2020.. A total of 239 samples were collected through face to face interview with pretested semi-structured questionnaire. Data were analyzed by a statistical software named Statistical Package for the Social Science (SPSS version 25). ***Results:*** Out of 239 respondents, most of them 56 (23.4%) belonged to the age group of 51-60 years followed by 41-50 years 51 (21.3%). among the respondents, females were found 156 (65.3%), male were 83 (34.7%). Male-female ratio was found 1:1.9. The mean value of TSH was found 27.55±56.9 among those who had thyroid disorders and 16.57±65.77 who hadn't any thyroid disorder. The result wasn't found significant. ***Conclusion:*** Thyroid Disorder has been increasing at an alarming rate day by day. The physicians should, therefore, pay particular attention to manage the condition.

Keywords: Endocrine disorder, Thyroid disease, TSH, Hypothyroidism, Hyperthyroidism.

INTRODUCTION

Thyroid gland typically makes thyroid hormones that keep our body functioning normally. Thyroid gland disease is more common than any other non-communicable diseases [1]. Thyroid disorder can be caused by iodine deficiency, autoimmune disease, hyperthyroidism, hypothyroidism, inflammation, nodule or non-cancerous lumps, cancerous tumours, certain medical treatment, including radiation therapy or thyroid surgery, some genetic disorders etc [2]. Thyroid gland is derived from Greek word meaning "shield gland". The reason behind the name was its resemblance to the classical shield (thureos) used by the ancient Greeks which acts like a shield by protecting our bodies in many ways from losing functional balance [3]. The thyroid gland is a butterfly-shaped tissue placed in the lower neck. By making iodine-containing hormones, it plays an important role in regulating growth, brain development as well as the degree of chemical reactions in our body [4].

Undoubtedly, thyroid disease is the commonest endocrine disorder worldwide along with in the South-East Asian region. About 300 people worldwide and 42 million people in the India abide from thyroid disease whereas over half are supposed to be unaware of their condition. Early diagnosis as well as adequate treatment remain the foundation of thyroid disease management [5]. In Bangladesh, TD (Thyroid disease) is one of the most debated non-communicable disease. However, the prevalence and incidence of the disease among the elderly of both sexes due to exchanges in the metabolic clearance of thyroid hormone, drug interactions along potential adverse

reactions [6]. As the downfall of iodine deficiency disorders since early nineties of the last century, the absolute and relative number of different thyroid disorders have changed over time. In Bangladesh, there was deficiency of published reports on the spectrum of thyroid disorders. Alike the other countries of Asia, the range of thyroid disorders other than iodine deficiencies was considered the same in Bangladesh. In that case, it is believed that around 10% of the Bangladeshi people undergo clinically evident thyroid disorders. Currently, subclinical hypothyroidism and hyperthyroidisms are included as like thyroid disorders adding another 10% population to be added with dysthyroid, totaling 20% of the population get trouble into any type of thyroid disorder [7]. The study was aimed to evaluate the thyroid disorders in clinical practices.

METHODOLOGY

This was a prospective cross-sectional study was conducted in the Department of Medicine, Mainamoti Medical College Hospital, Cumilla, Bangladesh during the period from January 2020 to July 2020. A total of 239 samples were collected through face to face interview with pretested semi-structured questionnaire. Data were analyzed by a statistical software named Statistical Package for the Social Science (SPSS version 25). The privacy of the respondents was strictly maintained & ethical clearance was taken from the study place. Respondents who were willingly participated in the study were included. The respondents who were mentally ill and couldn't give any consent to participate in the study were excluded from the study.

RESULTS

Table 1 showed that, out of 239 respondents, most of them 56 (23.4%) belonged to the age group of 51-60 years followed by 41-50 years 51 (21.3%).

Table-1: Age distribution of the study patients (n=239)

Age group (years)	Frequency	Percentage (%)
<20	16	6.7
21-30	33	13.8
31-40	43	18.0
41-50	51	21.3
51-60	56	23.4
61-70	31	13.0
70-80	9	3.8
Total	239	100.0
Mean±SD Range	45.6±15.81 (10 – 80) years	

Table 2 revealed that, among the respondents most of them were female 156 (65.3%). Male female ratio were found 1:1.9.

Table-2: Sex distribution of the study patients (n=239)

Sex	Frequency	Percentage (%)
Male	83	34.7
Female	156	65.3
Total	239	100.0
Male : Female ratio	1 : 1.9	

In Table 3 it had been found that out of 239 respondents the mean value of TSH was found 27.55±56.9 among those who had thyroid disorder and 16.57±65.77 who hadn't any thyroid disorder. The result wasn't found significant.

Table-3: Comparison of TSH between with or without thyroid disorders (n=239)

Variable	Thyroid disorder		p-value
	Present (n=93) Mean±SD	Absent (n=146) Mean±SD	
TSH	27.55±56.9	16.57±65.77	0.435^{ns}

P-value reached from Unpaired t-test, ns=-not significant

Table 4 revealed that, among the respondents 13 (32.5%) had DM as well as thyroid disorder & the

result was not found significant (0.098). Out of 239 respondents 2(5%) respondents had bronchial asthma and the result was found significant (<0.001).

Table-4: Association of thyroid disorder with clinical variables (n=239)

Clinical variable	Thyroid disorder		p-value
	Present (n=40) n(%)	Absent (n=199) n(%)	
DM	13(32.5%)	93(46.7%)	0.098^{ns}
COPD	0(0.0%)	7(3.5%)	0.229^{ns}
Hypertension	6(15.0%)	36(18.1%)	0.639^{ns}
Dyslipidemia	7(17.5%)	52(26.1%)	0.248^{ns}
Bronchial asthma	2(5.0%)	59(29.6%)	<0.001*

P-value reached from Chi-squaret-test, *significant, ns=-not significant

DISCUSSION

The thyroid gland exerts iodine (mostly absorbed from food supplements) to generate hormones that control how our body uses energy including how fast we burn calories and how fast our heart beats. Thyroid gland function impacts nearly every organ in our body [8].

Depending on how much or how little hormones are made by thyroid glands, it may often feel restless or tired, or may lose or gain weight. Women were more prone than men to have thyroid diseases, particularly right after pregnancy and after menopause [9].

In present study out of 239 respondents, most of them 56 (23.4%) belonged to the age group of 51-60 years followed by 41-50 years 51 (21.3%), among the respondents most of them were female 156 (65.3%). Male female ratio was found 1:1.9. Similar results were found in a study where a total of 925 individual studied, 527 was female and 398 was male with age ranges from 2-62 years (mean 19.86 +/- 13.62 years) [10].

In a study it was observed that, women had a greater risk than men (about 4–10/1, female/male), ATA frequency increased with age, with a peak at around 45–55 years [11].

The present study revealed that, out of 239 respondents the mean value of TSH was found 27.55±56.9 among those who had thyroid disorder and 16.57±65.77 who hadn't any thyroid disorder. The result wasn't found significant. In patient with nodular thyroid disease, the risk of thyroid malignancy increased with serum TSH, even within normal range higher TSH values were associated with a higher frequency and advanced stage of thyroid cancer [12]. A study found that, in both sexes the prevalence of TSH increased with age [13]. For pregnant women, application of TSH ranges were inconclusive, so expected to conduct further research on this area [14].

Thyroid function was determined in a study by serum T4, T3 and TSH levels. Among them TSH concentration might be the best discriminator between normal and mild excess as serum TSH level ascertains the tire of thyroid axis much more sensitively than serum thyroid hormone levels [15].

The outcome was a reflection of a selected study place, so the results might not be contemplated the overall scenario of the country. Further study with robust data was recommended.

CONCLUSION

Coordinated management of thyroid disorders engages almost all the specialties of modern medicine. In Bangladesh, more and more subspecialties might be developed that often verily improve the management of thyroid disorders within a short time.

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REFERENCES

1. Farling, P. A. (2000). Thyroid disease. *British Journal of Anaesthesia*, *85*(1), 15-28.
2. [Last accessed on 2022 June 8]. Available from: https://www.healthdirect.gov.au/causes-of-thyroid-problems.
3. Allam, M. (2012). *Detection of prevalence & characterization of thyroid disorder patients in Dhaka: a survey based study* (Doctoral dissertation, BRAC University).
4. Sana, S., Sajon, S. R., Rana, S., & Mostarin, Z. (2017). A short review on congenital hypothyroidism, environmental thyroiditis and current status of thyroid disease in Bangladesh. *Pharma Innovation*, *6*(10), 328-335.

5. Unnikrishnan, A. G., & Menon, U. V. (2011). Thyroid disorders in India: An epidemiological perspective. *Indian journal of endocrinology and metabolism*, *15*(Suppl2), S78.
6. Rahman, S., Jahan, N., & Sultana, N. (2012). Age Related Change in Thyroid Function. *Journal of Bangladesh Society of Physiologist*, *7*(2), 72-77.
7. Ansari, M. A. J. (2014). Thyroid disorders in Bangladesh-past, present and future. *Journal of Dhaka Medical College*, *23*(2), 151-152.
8. [Last accessed on 2022 June 8]. Available from: https://www.radiologyinfo.org/en/info/thyroid-disease.
9. [Last accessed on 2022 June 9]. Available from: https://www.womenshealth.gov/a-z-topics/thyroid-disease.
10. Paul, A. K., Miah, S. R., Mamun, A. A., & Islam, S. (2006). Thyroid disorders in Khulna district: a community based study. *Bangladesh medical research council bulletin*, *32*(3), 66-71.
11. Shahid, M. M., Begum, K., Rahman, K., Ara, H., Ferdousi, S., & Gomes, R. R. (2021). Thyroid disorders in arsenic prevalent area in Bangladesh. *Thyroid Research and Practice*, *18*(1), 19.
12. Fiore, E., & Vitti, P. (2012). Serum TSH and risk of papillary thyroid cancer in nodular thyroid disease. *The Journal of Clinical Endocrinology & Metabolism*, *97*(4), 1134-1145.
13. Bjoro, T., Holmen, J., Krüger, O., Midthjell, K., Hunstad, K., Schreiner, T., ... & Brochmann, H. (2000). Prevalence of thyroid disease, thyroid dysfunction and thyroid peroxidase antibodies in a large, unselected population. The Health Study of Nord-Trondelag (HUNT). *European journal of endocrinology*, *143*(5), 639-647.
14. Gessl, A., Lemmens-Gruber, R., & Kautzky-Willer, A. (2013). Thyroid disorders. Sex and Gender Differences in Pharmacology, 361-386.
15. Antonelli, A., Ferrari, S. M., Corrado, A., Di Domenicantonio, A., & Fallahi, P. (2015). Autoimmune thyroid disorders. *Autoimmunity reviews*, *14*(2), 174-180.