

Knowledge, attitudes and practices concerning thyroid disorder among the undergraduate student in Daffodil International University



[A dissertation submitted to the Department of Pharmacy, Faculty of Allied Health and Sciences, Daffodil International University, Dhaka. This report presented in partial fulfillment of the requirements for the degree of Bachelor of Pharmacy.]

Submitted To

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APPROVAL

This Project paper, survey on “**Knowledge, attitudes and practices concerning hair loss among the undergraduate student in Daffodil International University**” submitted to the Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and approved as to its style and contents.

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Declaration

I'm Shaharin Afrin, hereby declare that, this project is done by me under the guidance of Dr. Mohammed Shafikur Rahman, Associate Professor, Department of Pharmacy, Daffodil International University, in partial fulfillment of the requirements for degree of Bachelor of Pharmacy. The results embodied in this project have not been submitted to any other university or institute for the award of any degree.

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Certificate

This is to certify that the results of the investigation that are embodied in this thesis works are original and have not been submitted before in substance for any degree or diploma of this university. The entire present work submitted as a thesis work for the partial fulfillment of the degree of Bachelor of Pharmacy.



Dr. Mohammed Shafikur Rahman

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- Shaharin Afrin

Dedication



*To my parents and teachers,
who have always been my biggest supporters in all
facets of my life.*

Abstract

Background

The thyroid gland can generate either too little (hypothyroidism) or too much (hyperthyroidism) thyroid hormone as a result of a variety of conditions that damage the gland. Thyroid problems can have an effect on numerous biological functions, including heart rate, mood, energy level, metabolism, bone health, pregnancy, and many more. An autoimmune condition known as Hashimoto's disease is the most frequent cause of hypothyroidism. Understanding the undergraduate students' knowledge, attitude, and practice (KAP) on thyroid problem prevention is useful for disseminating knowledge to others.

Objective of the study

This study intends to investigate the KAP for thyroid disorders among students at Daffodil International University. In addition, this study seeks to identify the variables linked to KAPs for thyroid disorders and to evaluate the correlations between KAPs for thyroid disorders among DIU students. The study assisted in determining their level of knowledge and protective habits.

Methodology

This study used cross-sectional study, and 100 respondents were selected by using convenience sampling method. The questionnaire consists of 25 questions in a google form which were divided into four sections (socio-demographic characteristic, knowledge regarding thyroid disorder, the attitude on thyroid disorder and practice on prevention of thyroid disorder. The responses of the students were collected from 15th April to 20th April via varsity's email address and accepting responses were stopped when responses were reached to 100.

Results

A total of 100 students were questioned, with a mean age of 22.3 years (males: 33; females: 67). This poll included students from many disciplines. More than 80% of students were aware that thyroid disorder caused by hormonal imbalance and aware about the risk factors. 85% student intake foods that reduce the risk of thyroid disorder. Majority of them are involved in using social networking site and (92%) of them get information on thyroid disorder from Facebook & YouTube and Health personnel (80%) are comparatively satisfactory source to get information on thyroid disorder.

Conclusion

The current study found that, to a certain extent, thyroid problem KAP (knowledge, attitude, and practice) was adequate. Therefore, periodic large-scale informational, educational, and communicational efforts are required for undergraduate students.

Keyword: Factors, thyroid, disorder, hormonal, treatment.

INDEX

Chapter	Lesson	Topic	Page No.
01		Introduction	01-07
	1.1	Symptoms	02-03
	1.2	What causes thyroid problem?	03-04
	1.3	When to see doctor?	04
	1.4	Risk factors	04
	1.5	Complication	05
	1.6	Diagnosis	05-06
	1.7	Treatment	06-07
02		Literature Review	08-09
03		Objective of the study	10-11
04		Method & materials	12-14
	4.1	Study setup and design	13
	4.2	Sample size and sample strategy	13-14
	4.3	Data analysis	14
05		Result & discussion	15-21
	5.1	Socio-demographic characteristic of the study respondents	17
	5.2	Knowledge of respondents towards thyroid disorder	18
	5.3	Attitude of respondents towards thyroid disorder	19
	5.4	Practice of respondents towards thyroid disorder	20
	5.5	Source of information of the respondents on thyroid disorder	21
	5.6	Discussion	21
06		Conclusion	22-23
07		Reference	24-26



Introduction

CHAPTER ONE

1

1. Introduction

Near the front of the neck, around the trachea, is a tiny gland known as the thyroid. It is made to look like a butterfly with a smaller core and has two wide wings that wrap over the side of our throat. The thyroid is a gland. Glands in our bodies manufacture and release substances that provide our bodies the ability to carry out specific functions. Hormones produced by our thyroid help to control a variety of vital biological functions. On the body, thyroid dysfunction can have an impact. If the thyroid hormone that our bodies create is generated too much, an illness known as hyperthyroidism may result. Hypothyroidism, on the other hand, is a condition in which our body generates insufficient thyroid hormone. (Antonelli et al., 2015)

1.1 Symptoms

There are many different symptoms that someone with thyroid disease may experience. The symptoms of thyroid disease, unfortunately, usually match those of other illnesses and stages of life. This may make it difficult to tell whether anything altogether different than a thyroid problem is to blame for your symptoms. (Bauer et al., 2008)

Most thyroid illness symptoms fall into one of two categories: those associated with having too much thyroid hormone (hyperthyroidism) or too little thyroid hormone (hypothyroidism).

Hyperthyroidism (overactive thyroid) symptoms might include:

- Sensing anxiousness, irritation, and anxiety.
- Having problems falling asleep.
- Shedding pounds.
- Having a goiter or an enlarged thyroid gland.
- Having tremors and muscular wasting.
- Experiencing irregular menstrual periods or having your menstrual cycle stop.
- Feeling heat-sensitive.
- Experiencing visual issues or eye discomfort. (Franklyn, 1994)

The following are examples of hypothyroidism symptoms:

- Experiencing tiredness
- Gaining weight.

- Having memory loss
- Enduring regular, heavy menstrual cycles
- Having coarse, dry hair
- Being voiceless or hoarse
- Having a sensitivity to cold temperatures.

1.2 What Causes Thyroid Problems?

Although an excess of thyroid hormones is the cause of all forms of hyperthyroidism, there are several ways the ailment might manifest itself:

Graves' disease: Overproduction of thyroid hormone is the cause of Graves' disease. (Weetman, 2000)

Toxic adenomas: Some goiters may contain a number of these nodules. These nodules form in the thyroid gland and start to leak thyroid hormones, disturbing the body's chemical equilibrium. (Siegel et al., 1998)

Subacute thyroiditis: Thyroid inflammation that causes the gland to "leak" extra hormones, causing a brief episode of hyperthyroidism that typically lasts a few weeks but might last for months. (Greene, 1971)

Dysfunction of the pituitary gland or malignant thyroid gland growths: Although uncommon, these factors can also lead to hyperthyroidism.

Hypothyroidism, on the other hand, is caused by insufficient thyroid hormone production. Due to the fact that your body needs a certain amount of thyroid hormones to create energy, lower hormone production causes lower energy levels. Some of the causes of hypothyroidism are:

Hashimoto's thyroiditis: The body attacks the thyroid tissue in this sort of problem. The tissue progressively stops producing hormones as it ages. (Caturegli et al., 2014)

Surgery to remove the thyroid gland: It's possible that the thyroid was surgically removed or chemically damaged. (Seiler et al., 1996)

Lithium: This medication has also been linked to hypothyroidism.

Iodide exposure that is too high: You could be exposed to too much iodine by taking certain contrast dyes provided before some X-rays, amiodarone, cold and sinus medications, or other cardiac medications. If you've had thyroid issues in the past, you could be more likely to develop hypothyroidism. (Sun et al., 2014)

Long-term untreated hypothyroidism can result in an uncommon but possibly deadly illness called a myxedema coma, which calls for rapid hormone therapy. Newborns and babies are particularly at risk from hypothyroidism. Cretinism (an intellectual handicap) and dwarfism (stunted growth) can arise from a deficiency of thyroid hormones in the body at a young age. Nowadays, most newborns have their thyroid levels regularly monitored shortly after delivery. If hypothyroid, therapy starts right away. Hypothyroidism can result from any of the following in children as well as adults:

- Thyroid dysfunction
- A pituitary disorder
- Lack of the gland entirely

When a baby has hypothyroidism, they are extremely quiet, have a poor appetite, and sleep for disproportionately long periods of time. At about 5% of thyroid nodules, thyroid cancer is relatively uncommon. You may have one or more thyroid nodules for a period of years prior to their being diagnosed as cancerous. People who received radiation therapy to the head and neck as a young adult, perhaps as a remedy for acne, have a higher risk of developing thyroid cancer.

1.3 When to see a doctor?

One should see a doctor if they experience any other hypothyroidism symptoms, such as persistent fatigue. If taking thyroid hormone therapy for hypothyroidism, follow the advice of the healthcare provider regarding how frequently to schedule checkups. Planning regular consultations may be necessary to make sure the patient is initially taking the recommended amount of medicine. Checks can ultimately be necessary so that the doctor can monitor the patient's condition and treatment. (Shukla et al., 2009)

1.4 Risk factors

Although anybody can have hypothyroid, the following factors put one at higher risk:

- Female.
- Have thyroid problems running in your family.
- Possess an autoimmune illness, such as celiac disease or type 1 diabetes.
- Have had hyperthyroidism therapy.
- Received radiation in your upper chest or neck.
- Having a thyroid operation. (Luo et al., 2021)

1.5 Complication

If hypothyroidism is left untreated, it might result in other health issues, such as:

Goiter: As a result of hypothyroidism, the thyroid gland may expand. This condition is referred to as "goiter." Breathing or swallowing may be challenging due to a large goiter.

Infertility: Low levels of the thyroid hormone might stop ovulation, which may lower fertility. Other causes of hypothyroidism, such as autoimmune illnesses, can also affect fertility.

The myxedema coma: If hypothyroidism is not treated for an extended length of time, this rare, possibly dangerous condition can arise. A myxedema coma may be brought on by sedatives, illnesses, or other physical stresses. Acute fatigue and a great sensitivity to cold are its first symptoms, which are then followed by a significant loss of energy and, eventually, unconsciousness. For myxedema coma, immediate medical attention is needed.

Birth flaws: Kids born to mothers with untreated thyroid disease may have a higher risk of experiencing birth defects than kids born to mothers who do not have thyroid disease. The likelihood of serious problems with a child's physical and mental development increases when hypothyroidism in infants is left untreated. However, if the problem is identified in the first few months of life, there is a very good chance that it will develop normally.

Neuralgia of the periphery: Peripheral nerves may suffer damage from prolonged hypothyroidism without treatment. These nerves provide information from the brain and spinal cord to the various organs of the body. Peripheral neuropathy can cause aches, tingling, and numbness in the arms and legs.

Heart problem: Hypothyroidism may raise the chance of developing heart disease and heart failure. This is mostly because people with hypothyroidism usually have high LDL cholesterol levels, also referred to as "bad" cholesterol. (Little, 2006)

1.6 Diagnosis

Blood tests, a physical examination, and medical history are used to diagnose hyperthyroidism. You could require other testing as well, depending on the outcomes of the blood tests. Physical examination and medical history. During the examination, doctor could look for:

- A little trembling in patients' hands and fingers.
- Exaggerated reflexes.
- Pulse that is erratic or rapid.
- Eye morphs.
- Moist and warm skin.

As patient swallow, doctor checks patient's thyroid gland to determine whether it is bigger than normal, lumpy, or painful. (Hanley et al., 2016)

Blood test: Blood tests that track T-4, T-3, and thyroid-stimulating hormone (TSH) levels can be used to confirm a hyperthyroidism diagnosis. High T-4 levels and low TSH levels are common in people with hyperthyroidism. Since older people may not show the typical signs of hyperthyroidism, they should undergo blood tests more frequently. Thyroid blood tests may produce false results if you use biotin. Additionally, multivitamins might contain biotin, a B vitamin supplement. Let your doctor know if you take biotin or a multivitamin that contains it. Your doctor will guarantee the correctness of your blood test. If your blood test results show hyperthyroidism, your doctor may suggest one of the following tests.

Radioiodine uptake and scanning tests: In order to do this test to find out where and how much radioactive iodine accumulates in the patient's thyroid gland, a little quantity of radioiodine is administered to the patient. When the thyroid gland of the patient absorbs a lot of radioiodine, this is a symptom that the thyroid gland is creating too much thyroid hormone. The most likely causes are either Graves' disease or overactive thyroid nodules. Poor radioiodine absorption by the thyroid gland of the patient suggests that hormones stored there are leaking into the bloodstream. Thyroiditis is very definitely present in this case.

Thyroid ultrasound: This examination uses high-frequency sound waves to produce images of the thyroid. Ultrasound may make it simpler to find thyroid lesions.

1.7 Treatment

For hyperthyroidism, there are several treatment options. The best course of action depends on your age and physical condition. Furthermore, the origin of the hyperthyroidism as well as its degree are important. Your individual choices should be taken into consideration as you and your healthcare practitioner decide on a course of action. Treatment options include:

A thyroid-blocking drug: These medications progressively lessen the symptoms of hyperthyroidism by preventing the thyroid gland from generating too many hormones. Propylthiouracil and methimazole are two drugs used to treat hypothyroidism. Symptoms usually start to improve after several weeks or months. The average course of antithyroid drug therapy is 12 to 18 months. Once symptoms have subsided and a blood test shows that thyroid hormone levels are once again within the normal range, the dose may then be gradually decreased or stopped. After taking anti-thyroid medication, some people experience a long-term remission of their hyperthyroidism. However, some people may find that after receiving this treatment, their hyperthyroidism returns. (Lazarus & Obuobie, 2000)

Beta blocker: Thyroid hormone levels are unaffected by these medications. However, they can diminish hyperthyroidism symptoms including tremor, fast heartbeat, and palpitations. They may

occasionally be prescribed by medical professionals to treat symptoms until thyroid hormone levels are more in line with normal ranges. Asthmatics are often advised against using these medications. Sexual issues and weariness are potential side effects.

Radioiodine treatment: By the thyroid gland, radioiodine is absorbed. In response to this treatment, the gland shrinks. You consume this drug. Symptoms normally start to go away a few months after beginning this therapy. Due to this medication's ability to reduce thyroid activity to a manageable level, the thyroid gland becomes underactive. Specifically, it is hypothyroidism. Your thyroid hormones may eventually need to be restored with medicine. (Vaidya et al., 2008)

Thyroidectomy: This procedure involves removing all or a portion of the thyroid gland. Hyperthyroidism is not frequently treated with it. But women who are expecting could find it to be an option. It may also be an option for people who cannot or won't take radioiodine therapy or anti-thyroid medications. (Papaleontiou et al., 2012)



LITERATURE
REVIEW

CHAPTER TWO

2

2. Literature review

- ✚ About 2% of women and 0.2% of men are affected. The most common causes are Graves' illness, which primarily affects younger women, and different kinds of thyroid dysfunction in elderly women. A shortage of thyroid hormones is what hypothyroidism is. It is a typical endocrine condition brought on by Hashimoto thyroiditis, iodine shortage, post-operative radioiodine treatment, or autoimmune thyroiditis. Because thyroxine needs are based on fat-free mass, they are slightly higher in males who are undersubstituted more frequently. To prevent injury to the fetus caused by maternal thyroid dysfunctions, lower TSH-reference values should be taken into consideration throughout pregnancy, and thyroid function should be evaluated at regular intervals. If overtreated, men more frequently get atrial fibrillation whereas women more frequently have fractures. (Gessl et al., 2012)
- ✚ Thyroid illnesses include malignancy, thyroid goiter, nodules, and autoimmune thyroid diseases (AITD). Graves disease and autoimmune thyroiditis are the two primary components of AITD. The frequency of thyroid problems is disproportionately higher in women. For AITD and thyroid nodule, the female-to-male rate ratios are reported to be 4:6 and 3:4, respectively. When it comes to PTC, it is highest during the reproductive years and declines from five or more in patients aged 20 to 24, to 3.4 in patients aged 35 to 44, and finally to one in people over the age of 80. The thyroid gland and immune system are both affected by female gonadal hormones and X chromosomal inactivation, which significantly contributes to the female predisposition of AITD. (Li & Li 2015)



**OBJECTIVE
OF THE STUDY**

CHAPTER THREE

3

3. Objectives of the study:

3.1 General objective:

This study intends to investigate the KAP for thyroid disorders among students at Daffodil International University.

3.2 Specific objective:

In addition, this study seeks to identify the variables linked to KAPs for thyroid disorders and to evaluate the correlations between KAPs for thyroid disorders among DIU students. The study assisted in determining their level of knowledge and protective habits.

- The KAP phase was also help to find out the causes of thyroid disorder
- To determine the factors that are associated for thyroid disorder
- To make awareness on prevention of thyroid disorder among the students.



METHOD
&
MATERIALS

CHAPTER FOUR

4

4. Method and materials

4.1 Study setup and design

100 respondents were chosen by convenience sampling in this cross-sectional study, which utilized a cross-sectional design. The questionnaire consists of 25 questions in a google form which were divided into four sections (socio-demographic characteristic, knowledge regarding thyroid disorder, the attitude on thyroid disorder and practice on prevention of thyroid disorder).

Daffodil International University is located at Daffodil smart city, Dhaka, Bangladesh.

Plus code: V8GC+Q3 Birulia

The Pharmacy Department of the Faculty of Allied Health Sciences at Daffodil International University in Dhaka, Bangladesh, gave its approval to the study protocol. After participants had been informed of the study's goals, they voluntarily agreed to participate.

4.2 Sample size and sampling strategy

Daffodil International University has a total of 15000 students, of whom 8000 are male and 7000 are female, according to the most recent census. This university houses 15 departments.

The present study targeted 100 students among undergraduate students in Daffodil International University

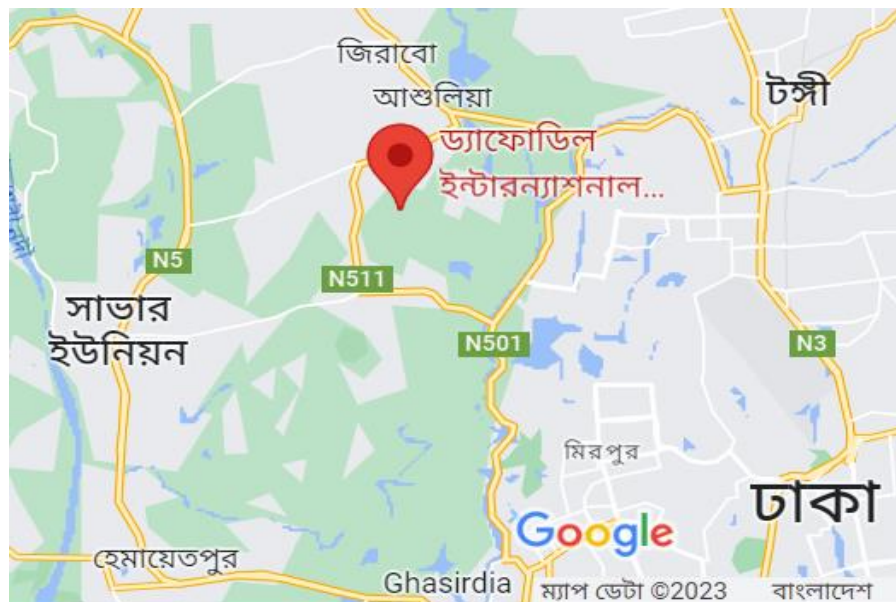


Figure: Daffodil International University in google map

The questionnaire used in this study was the improved version of the questionnaire validated by Dr. Md. Shafikur Rahman, Associate professor Daffodil International University. A pilot study (n = 10) was done to ensure the questionnaire carried effective, efficient, reliable, and valid data. The questionnaire was in the English language, the mostly wide international language. The questionnaire comprised a few sections; Demographic data and characteristics of respondents, Knowledge and Attitude. It contained 18 items for Knowledge and 15 items for Attitude and 10 items for practice towards hair loss control. The knowledge category had Yes/No/, and Attitude had Agree/Disagree response. A correct and positive answer was given mark 1 while wrong and negative answer got no mark. Total marks of correct answers were then calculated for each category.

After most face-to-face interviews, data were gathered using a google form by sending emails to the student's university's email address. Before conducting the survey, interviewers had training to make sure they fully understood the questionnaires, preventing any discrepancies in the meanings and interpretations of the terms used. Closed-ended questions about sociodemographic information, knowledge of the etiology, symptoms, attitudes, and habits of the respondents regarding hair loss were included in the questionnaire.

Data analysis

Questionnaires were arranged with proper title and sections in google form. So, a logical and effective summary have produced automatically. The results were shown in graphs, proportions and percentage and association of the knowledge attitude and practices with the different factors.



RESULT
& DISCUSSION

CHAPTER FIVE

5

5. Result and Discussion

5.1 Result

A total of 100 students were questioned, with a mean age of 22.3 years (males: 33; females: 67). This poll included students from many disciplines. More than 80% of students were aware that thyroid disorders are hormonal issues and can run in families. They are aware of the many forms of thyroid problems and their symptoms. 87% of students are terrified to experience thyroid disease, and 43% of students believe it cannot be prevented. All older adults, according to 76% of respondents, can have thyroid disorders. 87% of respondents felt strongly about seeking medical attention for thyroid problem symptoms. The radio, newspapers, and social networking sites accounted for the majority of the awareness, while 20% came from health professionals.

Table: 5.1 Socio-demographic characteristic of the study respondents (N = 100)		
Age (year)	19-24	100
Gender	Male	33
	Female	67
Marital status	Married	04
	Unmarried	96
Religion	Muslim	90
	Hindu	10
Education	All are undergraduate students.	100
Department	Pharmacy	23
	NFE	10
	English	03
	Software engineering	16
	CSE	28
	CIS	02
	EEE	03
	Textile	04
	BBA	06
	Civil Engineering	05

5.1 Socio-demographic characteristic of the study respondents

Table 5.1 displays the distribution of respondents based on sociodemographic traits. 100 students in all took part in the poll as responders. Most of them fall within the 19–24 age range. There were 23% men and 77% women. The Daffodil International University is their common affiliation. Some people live in hostels, while others rent homes.

Table 5.2 Knowledge of Respondents Towards Thyroid disorder:			
Sl. No.	Knowledge	Yes	No
01	Thyroid disorder is a hormonal problem	86%	14%
02	When body makes too much thyroid hormone that's called hyperthyroidism	96%	14%
03	When body makes too little thyroid hormone that's called hypothyroidism	96%	14%
04	Thyroid disorder can be passed down through families (inherited)	90%	10%
05	Thyroid disorder changed the right rate of metabolism	88%	12%
08	Symptoms of thyroid disorder include:		
	Hyperthyroidism		
	▪ Weight loses	68%	32%
	▪ Having an enlarged thyroid gland or a goiter.	85%	15%
	▪ Feeling sensitive to heat	60%	40%
	Hypothyroidism		
	▪ Feeling tired (fatigue).	86%	14%
	▪ Weight gain	58%	42%
▪ Unable to tolerate cold temperatures	85%	15%	
09	People having diabetes are at a higher risk of developing a thyroid disease	70%	30%

5.2 Knowledge of Respondents Towards Thyroid disorder:

Table 5.2 summarizes the correct knowledge of students on thyroid disorder's signs and symptoms. The majority of the 100 respondents correctly perceived that thyroid disorder is a hormonal problem. Most of them understand the difference between hyperthyroidism and hypothyroidism and their symptoms as well. (70 %) students know that people having diabetes are at a higher risk of developing a thyroid disease.

Table: 5.3 Attitude of Respondents' Towards Thyroid Disorder			
Sl. No.	Knowledge	Agree N (%)	Disagree N (%)
01	Thyroid disorder cannot be treated	43%	57%
02	Thyroid disorder often changes the voice	72%	28%
03	If I have thyroid disorder symptoms, I will quickly see a doctor	100%	00%
04	Following a healthy life reduce the risk of thyroid disorder	91%	09%

5.3 Attitude of Respondents' Towards Thyroid Disorder

Table 5.3 shows the attitudes of respondents' students towards thyroid disorder. The majority of respondent's positive attitude about the seriousness of thyroid disorder, its treatment and its prevention. (100%) of them have a positive attitude that if they face thyroid disorder, they will quickly see a doctor. 57% were involved to disagree that thyroid disorder cannot be treated. More than 90% students admit that following a healthy life reduce the risk of thyroid disorder.

Table: 5.4 Practice of Respondents' Towards Prevention of thyroid disorder			
Sl. No.	Knowledge	Yes	No
01	Do you avoid processed food?	65%	35%
02	Do you avoid soya sauce?	64%	46%
03	Do you visit doctor regularly	55%	45%
04	Do you take selenium containing food?	91%	09%
05	Do you follow a healthy lifestyle?	87%	13%

Table 5.4 summarizes good preventive practices against thyroid disorder among respondent students. Most of the student avoid processed food. More than (50%) students visit doctor regularly. Most of them (87%) take selenium containing food and lead a healthy life which is very important to reduce the risk of thyroid disorder.

Table 5.5 Source of information on thyroid disorder			
Sl. No.	Knowledge	Yes	No
01	Television	85%	15%
02	Newspapers/magazines	79%	21%
03	Health personnel	80%	20%
04	Social Networking Site (Facebook)	92%	08%

5.5 Source of information on Hair loss

Table 5.5 summarizes the source of information regarding thyroid disorder. Among 100 respondent's social media is everyone's source to get information on thyroid disorder. Majority of them are involved in using social networking site and (92%) of them get information on thyroid disorder from Facebook & YouTube and Health personnel (80%) are comparatively satisfactory source to get information on thyroid disorder.

5.6 Discussion:

Our study was a cross-sectional survey, which does not account for the dynamics of relationships between variables evaluated. Our sample size is relatively small and might not represent the whole population. It is noteworthy that in spite of such limitations, the present findings unveil the existing gaps in the KAPs regarding thyroid disorder and highlight the need for further large-scale studies.



CONCLUSION

6. Conclusion

The majority of the student in Daffodil International University have a clear understanding about common signs and symptoms of thyroid disorder. It appears that the good level of the student's knowledge of the signs/symptoms of thyroid disorder can guide them proper direction. This survey will help the students of Daffodil University to be more aware about thyroid disorder. But 40% students do not avoid soya sauce and this habit should be changed to keep them safe from risk factor of thyroid disorder.



REFERENCE

CHAPTER SEVEN

7

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Knowledge, attitudes and practices concerning thyroid disorder among the undergraduate student in Daffodil International University [[A dissertation submitted to the Department of Pharmacy, Faculty of Allied Health and Sciences, Daffodil International University, Dhaka.](#) This report presented in [partial fulfillment of the requirements for the degree of Bachelor of Pharmacy.](#)] Submitted To The Department of Pharmacy Faculty of Allied Health Sciences Daffodil International University Submitted By ID: 191-29-1388 Batch: 21th A Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University Date of submission: April, 2023 i APPROVAL This Project paper, survey on “Knowledge, attitudes and practices concerning hair loss among the undergraduate student in Daffodil International University” [submitted to the Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and approved as to its style and contents.](#) BOARD OF EXAMINERS Dr. Muniruddin Ahmed Professor and Head Department of Pharmacy Faculty of Allied Health Sciences Daffodil International University Internal Examiner 1 Internal Examiner 2 External Examiner ii Dedication To my parents and teachers, who have always been my biggest supporters in all facets of my life. . Abstract Background iii The thyroid gland can generate either too little (hypothyroidism) or too much (hyperthyroidism) thyroid hormone as a result of a variety of conditions that damage the gland. Thyroid problems can have an effect on numerous biological functions, including [heart rate, mood, energy level, metabolism, bone health, pregnancy, and many](#) more. [An autoimmune condition known as Hashimoto's disease is the most frequent cause of hypothyroidism.](#) Understanding [the](#) undergraduate students' [knowledge, attitude, and practice](#) (KAP) [on](#) thyroid problem [prevention](#) is useful for disseminating knowledge to others. Objective of the study This study intends to investigate the KAP for thyroid disorders among students at Daffodil International University. In addition, this study seeks to identify the variables linked to KAPs for thyroid disorders and to evaluate the correlations between KAPs for thyroid disorders among DIU students. The study assisted in determining their level of knowledge and protective habits. Methodology [This study used cross-sectional study, and 100 respondents were selected by using convenience sampling method. The questionnaire consists of 25 questions](#) in a google form [which were divided into four](#) sections ([socio-demographic characteristic, knowledge regarding thyroid disorder, the attitude on thyroid disorder and practice on prevention of](#) thyroid disorder. The responses of the students were collected from 15th April to 20th April via varsity’s email address and accepting responses were stopped when responses were reached to 100. Results A total of 100 students were questioned, with a mean age of 22.3 years (males: 33; females: 67). This poll included students from many disciplines. More than 80% of students were aware that thyroid disorder caused by hormonal imbalance and aware about the risk factors. 85% student intake foods that reduce the risk of thyroid disorder. Majority of them are involved in using social networking site and (92%) of them get information on thyroid disorder from Facebook & YouTube and Health personnel (80%) are comparatively satisfactory source to get information on thyroid disorder. Conclusion The current study found that, to a certain extent, thyroid problem KAP (knowledge, attitude, and practice) was adequate. Therefore, periodic large-scale informational, educational, and communicational efforts are required for undergraduate students. Keyword: Factors, thyroid, disorder, hormonal, treatment. INDEX iv Chapter 01 Lesson

Topic Introduction Page No. 01-07 1.1 Symptoms 02-03 1.2 What causes thyroid problem? 03-04 1.3 When to see doctor? 04 1.4 Risk factors 04 1.5 Complication 05 1.6 Diagnosis 05-06 1.7 Treatment 06-07 02 Literature Review 08-09 03 Objective of the study 10-11 04 Method & materials 12-14 4.1 Study setup and design 13 4.2 Sample size and sample strategy 13-14 4.3 Data analysis 14 05 Result & discussion 15-21 [5.1 Socio-demographic characteristic of the study respondents](#) 17 [5.2 Knowledge of respondents towards thyroid disorder](#) 18 [5.3 Attitude of respondents towards thyroid disorder](#) 19 [5.4 Practice of respondents towards thyroid disorder](#) 20 [5.5 Source of information of the respondents on thyroid disorder](#) 21 [5.6 Discussion](#) 21 06 Conclusion 22-23 07 Reference 24-26 v Introduction

CHAPTER ONE 1 1. Introduction Near the front of the neck, around the trachea, is a tiny gland known as the thyroid. It is made to look like a butterfly with a smaller core and has [two wide wings that wrap over the side of our throat. The thyroid is a gland.](#) Glands in our bodies manufacture and release substances that provide our bodies the ability to carry out specific functions. Hormones produced by our thyroid help to control a variety of vital biological functions. On the body, thyroid dysfunction can have an impact. If the thyroid hormone that our bodies create is generated too much, an illness known as hyperthyroidism may result. Hypothyroidism, on the other hand, is a condition in which our body generates insufficient thyroid hormone.

(Antonelli et al., 2015) 1.1 Symptoms There are many different symptoms that someone with thyroid disease may experience. The symptoms of thyroid disease, unfortunately, usually match those of other illnesses [and stages of life. This may make it difficult to tell whether anything altogether different than a thyroid problem is to blame for your symptoms.](#) (Bauer et al., 2008) [Most thyroid illness symptoms fall into one of two categories: those associated with having too much thyroid hormone \(hyperthyroidism\) or too little thyroid hormone \(hypothyroidism\).](#) [Hyperthyroidism \(overactive thyroid\) symptoms might include:](#) • Sensing [anxiousness, irritation, and anxiety.](#) • Having problems falling [asleep.](#) • [Shedding pounds.](#) • [Having a goiter or an enlarged thyroid gland.](#) • [Having tremors and muscular wasting.](#) • [Experiencing irregular menstrual periods or having your menstrual cycle stop.](#) • [Feeling heat-sensitive.](#) • Experiencing visual issues or eye discomfort.

(Franklyn, 1994) The following are examples of hypothyroidism symptoms: • Experiencing tiredness • Gaining [weight.](#) • [Having memory loss](#) • [Enduring regular, heavy menstrual cycles](#) • [Having coarse, dry hair](#) • [Being voiceless or hoarse](#) • [Having a sensitivity to cold temperatures.](#)

1.2 What Causes Thyroid Problems? Although an excess of thyroid hormones is the cause of all forms of hyperthyroidism, there are several ways the ailment might manifest itself: Graves' disease: Overproduction of thyroid hormone is the cause of Graves' disease. (Weetman, 2000) Toxic adenomas: Some goiters may contain a number of these nodules. These nodules form [in the thyroid gland and start to leak thyroid hormones,](#) disturbing [the body's chemical](#) equilibrium. (Siegel et al., 1998) [Subacute thyroiditis: Thyroid inflammation that causes the gland to "leak" extra hormones,](#) causing a brief episode of [hyperthyroidism that typically lasts a few weeks but](#) might last [for months.](#) (Greene, 1971)

Dysfunction of the pituitary gland or malignant thyroid gland growths: Although uncommon, these factors [can also lead to hyperthyroidism.](#) [Hypothyroidism, on the other hand, is caused by insufficient thyroid hormone production.](#) Due to the fact that your body needs a certain amount of thyroid hormones to create energy, lower hormone production causes [lower energy levels.](#) [Some of the causes of hypothyroidism](#) are: [Hashimoto's thyroiditis:](#)

The body attacks [the thyroid tissue](#) in this sort of problem. The tissue progressively stops producing hormones as it ages. (Caturegli et al., 2014) Surgery to remove the thyroid gland: It's possible that the thyroid was surgically removed or chemically damaged. (Seiler et al., 1996) Lithium: This

medication has also been linked to hypothyroidism. Iodide exposure that is too high: You could be exposed to too much iodine by taking certain contrast dyes provided before some X-rays, amiodarone, cold and sinus medications, or other cardiac medications. If you've had thyroid issues in the past, you could be more likely to develop hypothyroidism. (Sun et al., 2014) 3

©Daffodil International University Long-term untreated hypothyroidism can result in an uncommon but possibly deadly illness called a myxedema coma, which calls for rapid hormone therapy. Newborns and babies are particularly at risk from hypothyroidism. Cretinism (an intellectual handicap) and dwarfism (stunted growth) can arise from a deficiency of thyroid hormones in the body at a young age. Nowadays, most newborns have their thyroid levels regularly monitored shortly after delivery. If hypothyroid, therapy starts right away. Hypothyroidism can result from any of the following in children as well as adults: • Thyroid dysfunction • A pituitary disorder • Lack of the gland entirely When a baby has hypothyroidism, they are extremely quiet, have a poor appetite, and sleep for disproportionately long periods of time. At about 5% of thyroid nodules, thyroid cancer is relatively uncommon. You may [have one or more thyroid nodules for](#) a period of [years](#) prior to their being diagnosed as [cancerous. People who received radiation therapy to the head and neck](#) as a young adult, perhaps [as a remedy for acne, have a higher risk of developing thyroid cancer](#).

1.3 When [to](#) see a doctor? One should see a doctor if they experience any other hypothyroidism symptoms, such as persistent fatigue. If taking thyroid hormone therapy for hypothyroidism, follow the advice of the healthcare provider regarding how frequently to schedule checkups. Planning regular consultations may be necessary to make sure the patient is initially taking the recommended amount of medicine.

Checks can ultimately be necessary so that the doctor can monitor the patient's condition and treatment. (Shukla et al., 2009) 1.4 Risk factors

Although anybody can have hypothyroid, the following factors put one at higher risk: • Female. • Have thyroid problems running in your family. • Possess an autoimmune illness, such as celiac disease or type 1 diabetes. • Have had hyperthyroidism therapy. • Received radiation in your upper chest or neck. • Having a thyroid operation. (Luo et al., 2021) 1.5 Complication

If hypothyroidism is left untreated, it might result in other health issues, such as: Goiter: As a result of hypothyroidism, the thyroid gland may expand. This condition is referred to as "goiter." Breathing or swallowing may be challenging due to a large goiter. Infertility: Low levels of the thyroid hormone might stop ovulation, which may lower fertility. Other causes of hypothyroidism, such autoimmune illnesses, can also affect fertility.

The myxedema coma: If hypothyroidism is not treated for an extended length of time, this rare, possibly dangerous condition can arise. A myxedema coma may be brought on by sedatives, illnesses, or other physical stresses. Acute fatigue and a great sensitivity to cold are its first symptoms, which are then followed by a significant loss of energy and, eventually, unconsciousness. For myxedema coma, immediate medical attention is needed. Birth flaws: Kids

[born to mothers with untreated thyroid disease may have a higher risk of experiencing birth defects](#) than kids [born to mothers who do not have thyroid disease](#). The likelihood of serious problems with a child's physical and mental development increases when hypothyroidism in infants is left untreated.

However, if the problem is identified in the first few months of life, there is a very good chance that it will develop normally. Neuralgia of the periphery: Peripheral nerves may suffer damage from prolonged hypothyroidism without treatment. These nerves provide [information from the brain and spinal cord to the](#) various organs [of the body. Peripheral neuropathy can cause](#) aches, tingling, and [numbness](#) in the arms and legs. Heart problem: Hypothyroidism may raise the chance of developing heart disease and heart failure. This is mostly because people with hypothyroidism usually have high LDL cholesterol

levels, also referred to as "bad" cholesterol. (Little, 2006)

1.6 Diagnosis

Blood tests, a physical examination, and medical history are used to diagnose hyperthyroidism. You could require other testing as well, depending on the outcomes of the blood tests. Physical examination and medical history. During the examination, doctor could look for:

- A little trembling in patients' hands and fingers.
- Exaggerated reflexes.
- Pulse that is erratic or rapid.
- Eye morphs.
- Moist and warm skin.

As patient swallow, doctor checks patient's thyroid gland to determine whether it is bigger than normal, lumpy, or painful. (Hanley et al., 2016)

Blood test: Blood tests that track T-4, T-3, and thyroid-stimulating hormone (TSH) levels can be used to confirm a hyperthyroidism diagnosis. High T-4 levels and low TSH levels are common in people with hyperthyroidism. Since older people may not show the typical signs of hyperthyroidism, they should undergo blood tests more frequently. Thyroid blood tests may produce false results if you use biotin. Additionally, multivitamins might contain biotin, a B vitamin supplement. Let your doctor know if you take biotin or a multivitamin that contains it. Your doctor will guarantee the correctness of your blood test. If your blood test results show hyperthyroidism, your doctor may suggest one of the following tests.

Radioiodine uptake and scanning tests: In order to do this test to find out where and how much radioactive iodine accumulates in the patient's thyroid gland, a little quantity of radioiodine is administered to the patient. When the thyroid gland of the patient absorbs a lot of radioiodine, this is a symptom that the thyroid gland is creating too much thyroid hormone. The most likely causes are either Graves' disease or overactive thyroid nodules. Poor radioiodine absorption by the thyroid gland of the patient suggests that hormones stored there are leaking into the bloodstream. Thyroiditis is very definitely present in this case. Thyroid ultrasound: This examination uses high-frequency sound waves to produce images of the thyroid. Ultrasound may make it simpler to find thyroid lesions.

1.7 Treatment

For hyperthyroidism, there are several treatment options. The best course of action depends on your age and physical condition. Furthermore, the origin of the hyperthyroidism as well as its degree are important. Your individual choices should be taken into consideration as you and your healthcare practitioner decide on a course of action. Treatment options include:

A thyroid-blocking drug: These medications progressively lessen the symptoms of hyperthyroidism by preventing the thyroid gland from generating too many hormones. Propylthiouracil and methimazole are two drugs used to treat hypothyroidism. Symptoms usually start to improve after several weeks or months. The average course of antithyroid drug therapy is 12 to 18 months. Once symptoms have subsided and a blood test shows that thyroid hormone levels are once again within the normal range, the dose may then be gradually decreased or stopped. After taking anti-thyroid medication, some people experience a long-term remission of their hyperthyroidism. However, some people may find that after receiving this treatment, their hyperthyroidism returns. (Lazarus & Obuobie, 2000)

Beta blocker: Thyroid hormone levels are unaffected by these medications. However, they can diminish hyperthyroidism symptoms including tremor, fast heartbeat, and palpitations. They may 6 ©Daffodil International University occasionally be prescribed by medical professionals to treat symptoms until thyroid hormone levels are more in line with normal ranges. Asthmatics are often advised against using these medications. Sexual issues and weariness are potential side effects.

Radioiodine treatment: By the thyroid gland, radioiodine is absorbed. In response to this treatment, the gland shrinks. You consume this drug. Symptoms normally start to go away a few months after beginning this therapy. Due to this medication's ability to reduce thyroid activity to a manageable level, the thyroid gland becomes underactive. Specifically, it is hypothyroidism. Your thyroid hormones may eventually need to be restored

with medicine. (Vaidya et al., 2008) [Thyroidectomy: This procedure involves removing all or a portion of the thyroid gland. Hyperthyroidism is not frequently treated with it. But women who are expecting could find it to be an option. It may also be an option for](#) people [who](#) cannot or won't take radioiodine therapy or anti-thyroid medications. (Papaleontiou et al., 2012)

LITERATURE REVIEW CHAPTER TWO 2. Literature review About 2% of women and 0.2% of men are affected. The most common causes are Graves' illness, which primarily affects younger women, and different kinds of thyroid dysfunction in elderly women. A shortage of thyroid hormones is what hypothyroidism is. It is a typical endocrine condition brought on by Hashimoto thyroiditis, iodine shortage, post-operative radioiodine treatment, or autoimmune thyroiditis. Because thyroxine needs are based on fat-free mass, they are slightly higher in males who are undersubstituted more frequently. To prevent injury to the fetus caused by maternal thyroid dysfunctions, lower TSH-reference values should be taken into consideration throughout pregnancy, and thyroid function should be evaluated at regular intervals. If overtreated, men more frequently get atrial fibrillation whereas women more frequently have fractures. (Gessl et al., 2012) Thyroid illnesses include malignancy, thyroid goiter, nodules, and autoimmune thyroid diseases (AITD). Graves disease and autoimmune thyroiditis are the two primary components of AITD. The frequency of thyroid problems is disproportionately higher in women. For AITD and thyroid nodule, the female-to-male rate ratios are reported to be 4:6 and 3:4, respectively. When it comes to PTC, it is highest during the reproductive years and declines from five or more in patients aged 20 to 24, to 3.4 in patients aged 35 to 44, and finally to one in people over the age of 80. The thyroid gland and immune system are both affected by female gonadal hormones and X chromosomal inactivation, which significantly contributes to the female predisposition of AITD. (Li & Li 2015)

OBJECTIVE OF THE STUDY CHAPTER THREE 3 [3. Objectives of the study: 3.1 General objective: This study intends to investigate the KAP for thyroid disorders among students at Daffodil International University. 3.2 Specific objective: In addition, this study seeks to identify the variables linked to KAPs for thyroid disorders and to evaluate the correlations between KAPs for thyroid disorders among DIU students. The study assisted in determining their level of knowledge and protective habits. • The KAP phase was also help to find out the causes of thyroid disorder • To determine the factors that are associated for thyroid disorder • To make awareness on prevention of thyroid disorder among the students.](#) METHOD & MATERIALS CHAPTER FOUR 4. Method and materials 4.1 Study setup and design 100 respondents were chosen by convenience sampling in this cross-sectional study, which utilized a cross-sectional design. The questionnaire consists of 25 questions in a google form [which were divided into four sections \(socio-demographic characteristic, knowledge regarding thyroid disorder, the attitude on thyroid disorder and practice on prevention of thyroid disorder.](#) Daffodil International University is located at Daffodil smart city, Dhaka, Bangladesh. Plus code: V8GC+Q3 Birulia The Pharmacy [Department of the Faculty of Allied Health Sciences at Daffodil International University in Dhaka, Bangladesh,](#) gave its approval to the study protocol. After participants had been informed of the study's goals, they voluntarily agreed to participate. 4.2 Sample size and sampling strategy Daffodil International University has a total of 15000 students, of whom 8000 are male and 7000 are female, according to the most recent census. This university houses 15 departments. The present study targeted 100students among undergraduate students in Daffodil International University Figure: Daffodil International University in google map [The questionnaire used in this study was the improved version of the questionnaire validated by](#) Dr. Md. Shafikur Rahman, Associate professor Daffodil International University. [A pilot study \(n = 10\) was done to ensure the questionnaire carried effective,](#)

efficient, reliable, and valid data. The questionnaire was in the English language, the mostly wide international language. The questionnaire comprised a few sections; Demographic data and characteristics of respondents, Knowledge and Attitude. It contained 18 items for Knowledge and 15 items for Attitude and 10 items for practice towards hair loss control. The knowledge category had Yes/No/, and Attitude had Agree/Disagree response. A correct and positive answer was given mark 1 while wrong and negative answer got no mark. Total marks of correct answers were then calculated for each category. After most face-to-face interviews, data were gathered using a google form by sending emails to the student's university's email address. Before conducting the survey, interviewers had training to make sure they fully understood the questionnaires, preventing any discrepancies in the meanings and interpretations of the terms used. Closed-ended questions about sociodemographic information, knowledge of the etiology, symptoms, attitudes, and habits of the respondents regarding hair loss were included in the questionnaire. Data analysis Questionnaires were arranged with proper title and sections in google form. So, a logical and effective summary have produced automatically. The results were shown in graphs, proportions and percentage and association of the knowledge attitude and practices with the different factors.

RESULT & DISCUSSION

CHAPTER FIVE

5. Result and Discussion

5.1 Result

A total of 100 students were questioned, with a mean age of 22.3 years (males: 33; females: 67). This poll included students from many disciplines. More than 80% of students were aware that thyroid disorders are hormonal issues and can run in families. They are aware of the many forms of thyroid problems and their symptoms. 87% of students are terrified to experience thyroid disease, and 43% of students believe it cannot be prevented. All older adults, according to 76% of respondents, can have thyroid disorders. 87% of respondents felt strongly about seeking medical attention for thyroid problem symptoms. The radio, newspapers, and social networking sites accounted for the majority of the awareness, while 20% came from health professionals.

Table: 5.1 Socio-demographic characteristic of the study respondents (N = 100)

Age (year)	19-24	100
Gender	Male	Female
	33	67
Marital status	Married	Unmarried
	04	96
Religion	Muslim	Hindu
	90	10
Education	All are undergraduate students. 100	
Department	Pharmacy	23
	NFE	10
	English	03
	Software engineering	16
	CSE	28
	CIS	02
	EEE	03
	Textile	04
	BBA	06
	Civil Engineering	05

5.1 Socio-demographic characteristic of the study respondents

Table 5.1 displays the distribution of respondents based on sociodemographic traits. 100 students in all took part in the poll as responders. Most of them fall within the 19–24 age range. There were 23% men and 77% women. The Daffodil International University is their common affiliation. Some people live in hostels, while others rent homes.

Table 5.2 Knowledge of Respondents Towards Thyroid disorder: Sl. No.

Knowledge	Yes	No
01	Thyroid disorder is a hormonal problem	86% 14%
02	When <u>body makes too much thyroid hormone</u> that's called hyperthyroidism	96% 14%
03	When <u>body makes too little thyroid hormone</u> that's called <u>hypothyroidism</u>	96% 14%
04	Thyroid disorder can <u>be passed down through families (inherited)</u>	90% 10%
05	Thyroid disorder changed the right rate of metabolism	88% 12%
08	Symptoms of thyroid disorder include:	
	Hyperthyroidism • Weight loses	68% 32%
	• <u>Having an enlarged thyroid gland or a goiter.</u>	85% 15%
	• Feeling sensitive to heat	60% 40%
	Hypothyroidism • Feeling tired (fatigue).	86% 14%
	• Weight gain	58% 42%
	• Unable to tolerate cold temperatures	85% 15%
09	People having diabetes <u>are at a higher risk of developing a thyroid disease</u>	70% 30%

5.2 Knowledge of Respondents Towards Thyroid disorder:

Table 5.2 summarizes the correct knowledge of students on thyroid disorder's signs and symptoms. The majority of the 100 respondents correctly perceived that thyroid disorder is a hormonal problem. Most of them understand the difference between

hyperthyroidism and hypothyroidism and their symptoms as well. (70 %) students know that people having diabetes [are at a higher risk of developing a thyroid disease](#). Table: 5.3 Attitude of Respondents' Towards Thyroid Disorder

Sl. No.	Knowledge	Agree	N (%)	Disagree	N (%)
01	Thyroid disorder cannot be treated	43%	57%		
02	Thyroid disorder often changes the voice	72%	28%		
03	If I have thyroid disorder symptoms, I will quickly see a doctor	100%	00%		
04	Following a healthy life reduce the risk of thyroid disorder	91%	09%		

5.3 Attitude of Respondents' Thyroid Disorder Table 5.3 shows the attitudes of respondents' students towards thyroid disorder. The majority of respondent's positive attitude about the seriousness of thyroid disorder, its treatment and its prevention. (100%) of them have a positive attitude that if they face thyroid disorder, they will quickly see a doctor. 57% were involved to disagree that thyroid disorder cannot be treated. More than 90% students admit that following a healthy life reduce the risk of thyroid disorder. Table: 5.4 Practice of Respondents' Towards Prevention of thyroid disorder

Sl. No.	Knowledge	Yes	No
01	Do you avoid processed food?	65%	35%
02	Do you avoid soya sauce?	64%	46%
03	Do you visit doctor regularly	55%	45%
04	Do you take selenium containing food ?	91%	09%
05	Do you follow a healthy lifestyle?	87%	13%

Table 5.4 summarizes good preventive practices against thyroid disorder [among respondent](#) students. Most of the student avoid processed food. More than (50%) students visit doctor regularly. Most of them (87%) take selenium containing food and lead a healthy life which is very important to reduce the risk of thyroid disorder. Table 5.5 Source of information on Thyroid disorder

Sl. No.	Knowledge	Yes	No
01	Television	85%	15%
02	Newspapers/magazines	79%	21%
03	Health personnel	80%	20%
04	Social Networking Site (Facebook)	92%	08%

5.5 Source of information on Thyroid disorder Table 5.5 summarizes the source of information regarding thyroid disorder. Among 100 respondent's social media is everyone's source to get information on thyroid disorder. Majority of them are involved in using social networking site and (92%) of them get information on thyroid disorder from Facebook & YouTube and Health personnel (80%) are comparatively satisfactory source to get information on thyroid disorder. 5.6 Discussion: [Our study was a cross-sectional survey, which does not account for the dynamics of relationships between variables evaluated. Our sample size is relatively small and might not represent the whole population. It is noteworthy that in spite of such limitations, the present findings unveil the existing gaps in the KAPs regarding thyroid disorder and highlight the need for further large-scale studies.](#) **CONCLUSION** CHAPTER SIX 6 6. Conclusion The majority of the student in Daffodil International University have a clear understanding about common signs and symptoms of thyroid disorder. [It appears that the good level of the student's knowledge of the signs/symptoms of](#) thyroid disorder can guide them proper direction. This survey will help the students of Daffodil University to be more aware about thyroid disorder. But 40% students do not avoid soya sauce and this habit should be changed to keep them safe from risk factor of thyroid disorder. REFERENCE CHAPTER SEVEN 7 7. Reference Antonelli, A., Ferrari, S. M., Corrado, A., Di Domenicantonio, A., & Fallahi, P. (2015). Autoimmune thyroid disorders. *Autoimmunity reviews*, 14(2), 174-180.. Bauer, M., Goetz, T., Glenn, T., & Whybrow, P. C. (2008). The thyroid-brain interaction in thyroid disorders and mood disorders. *Journal of neuroendocrinology*, 20(10), 1101-1114. Franklyn, J. A. (1994). The management of hyperthyroidism. *New England Journal of Medicine*, 330(24), 1731-1738. Gessl, A., Lemmens-Gruber, R., & Kautzky-Willer, A. (2012). Thyroid disorders. *Sex and Gender Differences in Pharmacology*, 361-386. Li, H., & Li, J. (2015). Thyroid disorders in women. *Minerva medica*, 106(2), 109-114. Weetman, A. P. (2000). Graves' disease. *New England Journal of Medicine*, 343(17), 1236- 1248. Siegel, R. D., & Lee, S. L. (1998). Toxic nodular goiter: toxic adenoma and toxic multinodular goiter. *Endocrinology*

