



A Study on the frequency of thyroid disorders in India's population

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Abstract

In this study, the prevalence of thyroid illnesses in India's general population was investigated and reported. Thyroid diseases are widespread worldwide. Around the world, especially in India, thyroid disorders are a significant burden. According to estimations from several studies on the illness, 42 million people in India are estimated to have thyroid issues. The five thyroid diseases that are common in India include hypothyroidism, hyperthyroidism, thyroid cancer, and hashimoto's thyroiditis. This review will focus on the epidemiology of each of these diseases. A brief mention of the exciting research being done to establish India's normal reference range for thyroid hormones, notably in pregnancy and in young children, will also be included in this review.

Keywords: Thyroid disorders, hormones, epidemiology, endocrine gland

Introduction

The thyroid is an endocrine gland that is situated beneath the cricoid cartilage, thyroid is butterfly shaped organ which have two lobes one is lobus dexter and lobus sinister ^[1]. It is made up of follicular and para follicular cells ^[2]. the follicular cell secretes t3 and t4 hormones ^[3], and the parafollicular cell secrete the calcitonin hormones ^[4]. Weight of thyroid gland is 18-60gram ^[5].

The thyroid hormones help in the metabolic function and growth and development ^[4]. Metabolic function includes increasing the metabolism of carbohydrates, protein, and lipids ^[6]. Control the other activity of other hormones like insulin, glucocorticoids, Increase the oxygen consumption and heat production, Increase the cardiac activity, Affect the function of kidney, liver, and muscle, Increase the production of growth hormones and potentiating its effects, Important for skeletal development, Essential for normal growth and maturation of CNS ^[7-9].

Aim: Frequency of thyroid disorders in general population of India, the assessment and validation of analyser with special reference to principle and method of thyroid.

Objective: To perform the thyroid sample in auto bio machine in autolumoa1000, the analyser using CLIA microparticle method, in which three reagent we are using microparticles solution and Enzyme conjugate. This analyser gives the result in 45 minutes.

2. Literature Review

The survival and cognitive development of the foetus are negatively impacted by subclinical hypothyroidism that is not recognized during pregnancy. In pregnancy, the regular need for thyroxine rises by 45% as thyroid-binding globulin levels rise [10]. According to Chang & Doerge (2000), children with subclinical hypothyroidism aged 7 to 9 had an IQ score 7 points lower than children of mothers with euthyroid thyroid disease. As a result, the study highlights the significance of screening pregnant women for hypothyroidism and treating subclinical hypothyroidism ^[12]. Thyroid release mainly two hormones T3 and T4

Thyroxine: Mainly release from thyroid glands T4 is also called thyroxine T4 release in a 100ug in a day.

T4 is bound with protein 10-20. thyroxine half-life is 5-7 days.

There are two types of thyroxine: bound T4 and free T4, the latter of which binds to proteins and prevents access into body tissues ^[13].

Normal range of thyroxine is 0.40-4.50 mIU/l.

Thyroxine is the main hormone secreted into the blood stream.

Triiodothyronine

It is also known as T3, triiodothyronine is 15% is release from thyroid gland and the 85% is converted from T4 ^[13].

T3 is 6 ug secrete in a day T3 has 3-5 times more active then T4, half-life of T3 is 1 day.

Normal range of T3 is 60 to 180 ng/dl.

T3 helps in maintain muscle control, brain function development, and digestive function.

Thyroid stimulating hormone is known as TSH-TSH. TSH gauges t3 and t4 hormone levels. The thyroid is a little butterfly-shaped gland located close to your throat. Your body's energy usage is governed by the hormones the thyroid produces ^[14]. It is also essential for managing your body temperature, weight, muscular mass, and mood. A brain gland produces TSH called the pituitary. When the thyroid levels in your body are low, the pituitary gland makes more TSH ^[15]. When thyroid hormone levels are high, the pituitary gland produces less TSH. Abnormally high or low TSH results indicate that your thyroid isn't working correctly ^[16].

The presence of hypothyroidism, or an underactive thyroid, is indicated by high TSH levels. That's because it shows that your pituitary gland is creating more TSH to encourage the production of thyroid hormone by your thyroid ^[17].

Disorder of thyroid gland

Thyroids have two types of disorders ^[1] hypothyroidism and hyperthyroidism

Hypothyroidism: Hashimotos thyroiditis, Cretinism, Myxoedema, Postpartum thyroiditis, and Sick euthyroidism

Hyperthyroidism: Grave's disease, Toxic thyroid nodule, and Thyroid storm

Hypothyroidism

In hypothyroidism, the thyroid gland fails to generate enough thyroid hormone. As a result, your metabolism slows down. You may experience fatigue, weight gain, and problems adjusting to cold temperatures if you have hypothyroidism, commonly known as an underactive thyroid [18]. This is slow down the body metabolic and growth function [19].

Primary hypothyroidism: thyroid cannot produce enough hormone as per pituitary signal is called thyroid failure.

Secondary hypothyroidism- thyroid is not being stimulate from pituitary to produce hormone is called pituitary failure.

Disease of hypothyroidism

The autoimmune lymphocytic thyroiditis known as Hashimoto's thyroiditis, which was initially described by Hakaru Hashimoto, is the most common cause of hypothyroidism. According to Mounika et al. (2013), Hashimoto is a condition when the immune system starts attacking the body's tissues. The immune system targets the thyroid. This may result in hypothyroidism, where the thyroid produces insufficient hormones to meet the body's requirements. [21].

Cause of Hashimoto 'thyroiditis

Genes: A person with Hashimoto's may have family members who also have thyroid issues or other autoimmune disorders. That would suggest that there is a genetic component to the disease.

Hormones: Hashimoto's disease affects women seven times more frequently than males, possibly related to sex hormones. After giving birth, some women experience thyroid issues for the first year [22]. However, up to 20% of these women develop Hashimoto's years later, even though the issue typically disappears.

Radiation exposure: Radiation exposure has been linked to increased thyroid illness cases among those affected by the Chernobyl nuclear catastrophe; the atomic bombs dropped on Japan, and radiation therapy for "Hodgkin's disease" [23]. TSH-R Ab block, Antithyroid antibodies, Microsomal Ab, and Thyroglobulin Ab

Clinical symptoms

Decrease metabolic rate, Weight gain, anorexia, Dry skin, Depression, Muscle weakness, More menstrual bleeding, and Prone to hypothermia

Cretinism: Hypothyroidism dating from birth.

Thyroid hormone deficiency severely hinders the growth and development of the brain. During the first three years of life, thyroxine is crucial for brain growth and development; the earlier the onset, the more severe the brain damage [24].

Etiology: Radio iodine/surgery, Congenital developmental defects, Iodine deficiency, and post radiation.

Hyperthyroidism

Hyperthyroidism over reactive thyroid causes your thyroid to produce more thyroid hormone t3 and t4 than demands

this enhance the metabolic and growth function of the body. Numerous studies have examined the prevalence of hyperthyroidism. Hyperthyroidism was prevalent in 1.6% and 1.3% of participants in a public survey, respectively, in an epidemiological study from Cochin [11]. In hospital-based research of Pondicherry women, 0.6% and 1.2% of participants had subclinical and overt hyperthyroidism, respectively. Anti-TPO antibodies are positive in more than one-third of hyperthyroidism seen in the general population, and 39% of these individuals have a goitre.

Goitre and iodine deficiency

A goitre commonly develops the deficiency or inflammation of the thyroid gland. Autoimmune thyroid illness is probably a more common cause of goitre in areas with adequate iodine now than iodine deficiency [16]. But given that it is a problem in India, the importance of iodine deficiency cannot be overstated there [13].

Lack of iodine in the diet is the leading cause of goitre. Several eminent researchers have researched the connection between endemic goitre and iodine shortage in India, and as a result, several noteworthy publications have been published [16]. Critical research has revealed that endemic goitre affects the entire country, not just the Himalayan and Sub-Himalayan regions. This was linked to an iodine deficiency, which, in many cases, resulted in decompensated hypothyroidism, according to research from New Delhi [11].

This prompted groundbreaking research establishing the link between iodine deficit and hypothyroidism in newborns. This opened the door for the now well-known salt iodization programme that the Indian government supported. Following the broadcast of this programme, it was discovered that in a select region of Uttar Pradesh, the prevalence of congenital hypothyroidism had fallen from 100/1000 to 18/1000. In the nation, several essential studies on iodine-deficient disorders have been conducted.

Types of Goitre

Simple goitre: If your thyroid gland is not producing enough hormones. As a result, the thyroid enlarges to compensate.

Endemic goitre: Goitres that are caused by a deficiency of iodine in your diet are also known as colloid goitres. Your thyroid uses iodine to produce hormones. People need to develop this type of goiter in nations like the United States, where iodine is supplied to table salt.

Sporadic or Nontoxic goitre: Usually, we have no established cause. They can be induced by specific medications and medical circumstances.

Multinodular goitre: Which take place when nodules, or lumps, develop in your thyroid.

Goitre prevalence, thiocyanate excretion, urinary iodine, thyroid function, and cytopathological and serological indicators for thyroid autoimmunity were all examined in approximately 14,762 kids throughout India. A goitre affected about 23% of the individuals. When compared to controls (0.64 mg/dl), goitrous participants had a median urine thiocyanate (USCN) excretion level that was considerably greater (0.75 mg/dl; P 0.001).

Autoimmune thyroiditis in India

Atrophic thyroiditis, which destroys the thyroid tissue, is a form of autoimmune thyroid disease that initially manifests as Hashimoto's type of thyroiditis. To keep levels of thyroid hormone normal, this results in a compensatory rise in the amount of thyroid-stimulating hormone [17]. Subclinical hypothyroidism is a state of illness where people are asymptomatic but still have relatively high TSH levels. T4 levels drop, and TSH levels rise further as the condition worsens. According to demographic research, 12.1% and 16.7% of adult participants have antibodies against thyroglobulin (TG) and thyroid peroxidase (TPO). When people with impaired thyroid function were eliminated from this same research of 971 participants, the prevalence of anti-TG and anti-TPO antibodies was 8.5% and 9.5%, respectively.

In an investigation of "Hashimoto's thyroiditis", 6283 schoolgirls nationwide were evaluated. 1810 of the schoolgirls had goitres. Of the 764 who underwent fine-needle aspiration cytology, 58 (or 7.5%) showed signs of juvenile autoimmune thyroiditis, comprising both focal lymphocytic thyroiditis and Hashimoto's thyroiditis. overt hypothyroidism, and Subclinical was observed in 6.5% and 15% of juvenile autoimmune thyroiditis cases with fine needle aspiration cytology confirmation [20].

Thyroid cancer in India

The Indian Council of Medical Research (ICMR) founded the "National Cancer Registry Programme", and between 1984 and 1993, the NCRP gathered data on more than 3,000 people with cancer. The NCRP identified 5614 thyroid cancer cases among these patients, including 3617 female cases and 2007 male instances. The six study locations were Chennai, Delhi, Dibrugarh, Thiruvananthapuram, Mumbai, and Chandigarh. With 1.99% of male patients and 5.71% of female cases, Among all cancer cases listed in the hospital registry, thyroid cancer cases in Thiruvananthapuram had the highest relative frequency [18]. On average, thyroid cancer was 0.1% to 0.2% of all cancer cases nationwide. Age-adjusted incidence rates of thyroid cancer per 100,000 people, according to the Mumbai Cancer Registry, were approximately 1 for males and 1.8 for women. This registry included a population of 9.81 million participants [10]. The histological subtypes of thyroid cancer were investigated using a "Hospital Cancer Registry of 1185 new cases" of thyroid cancer.

Graves' disease

The thyroid gland becomes overactive in Graves' disease, an autoimmune disorder that causes it to release more hormones than is necessary. Hyperthyroidism, a disorder in which the thyroid gland generates too many hormones, is primarily caused by it [10]. It is among the most common thyroid problems. Sir Robert Graves, who provided the first recorded report in the early 19th century, was honoured by having it given that name.

In the front of the neck, the thyroid gland is a tiny, butterfly-shaped gland that secretes hormones that help regulate metabolism [18]. Your immune system attacks your thyroid when you have Graves' disease, causing it to create excess amounts of those hormones, which can lead to various issues throughout your body [15]. Women are more frequently affected than men, typically affecting persons between the ages of 30 and 50.

Treatment is simple if the condition has been accurately diagnosed. After several months or years, Graves' illness may occasionally enter remission or fade away entire [18]. But if addressed, it can result in fatal consequences and other significant issues.

Graves' Disease causes

The hormone that controls metabolism, or how rapidly the body turns food into energy, is kept in check by the thyroid gland. The amount of hormones in the bloodstream has a direct impact on metabolism [13]. The body's metabolism speeds up when the thyroid gland secretes too much of these hormones for any cause, resulting in a racing heart, excessive sweating, trembling, and weight loss [20].

The brain's pituitary gland also secretes thyroid-stimulating hormone (TSH), which tells the thyroid to make thyroid hormone. In contrast, aberrant antibodies that mimic TSH are produced by the body as a result of an immune system deficiency in Graves' disease [8]. The thyroid's hormone factories work too hard and manufacture too much hormone as a result of these faulty cues to create.

Thyroid nodules

A thyroid nodule is an abnormal growth (lump) of thyroid cells in the thyroid gland.

The thyroid is a component of the endocrine system, consisting of glands that release various hormones into the blood. The thyroid is an organ with a butterfly-like form that is located on the front of the neck, directly below the Adam's apple [13]. The thyroid gland, which has a right and left lobe linked by an isthmus, produces and releases thyroid hormones. According to Filetti et al. (2019), states that thyroid hormones regulate body temperature, digestion, and heartbeat.

One or more nodules may occasionally occur when the thyroid starts to enlarge (overgrow). Cancer is the primary concern when nodules develop; however, this condition is highly uncommon—it only occurs in fewer than 5% of all nodules [5]. Nodules are more likely to form in those who don't get enough iodine and in those with a family history of them. Iodine is necessary for producing thyroid hormones. [2].

Thyroid nodules can be of several different types

Colloid nodules: These are a few overgrowths of thyroid tissue that is healthy. They are not malignant growths. Although they can grow to huge sizes, they cannot spread past the thyroid gland.

Thyroid cysts: These growths might be totally fluid-filled or entirely fluid-filled with solid portions.

Multinodular goitre: Goitre is a benign condition caused by the thyroid gland's growth, which is made up of many nodules.

Inflammatory nodules: The persistent inflammation of the thyroid gland causes these nodules to enlarge. These growths may or may not be painful.

Hyperfunctioning thyroid nodules: The development of hyperthyroidism may result from these nodules' autonomous thyroid hormone production without consideration for typical feedback regulation mechanisms [12]. Hyperthyroidism can injure the heart and cause sudden

cardiac arrest, high blood pressure, arrhythmias (abnormal heart rhythm), osteoporosis, and other health problems [2].

Thyroid cancer: The percentage of malignant thyroid nodules is less than 5%.

Symptoms

Enlarged thyroid gland, Frequent, heavy menstrual periods, Fatigue (feeling tired), Forgetfulness, Hoarse voice, Weight gain, Trouble dealing with cold temperatures, coarse skin, Weight loss, hair loss, Dry hair, Weakness/irritability, Depression, Constipation, Generalized edema (swelling), Irritability/nervousness, Light or missed menstrual periods, Vision problems or eye irritation, Muscle weakness/tremors, Increase or decrease in appetite, and Heat sensitivity (trouble dealing with heat).

Thyroid nodules are predisposed to the following risk factors:

Family history: You are more likely to develop nodules if someone in your family has thyroid nodules, thyroid cancer, or another endocrine disease.

Gender: Women are more effected as compared to men.

Age: You are more likely to acquire thyroid nodules as you become older.

Radiation exposure: Your risk of getting nodules rises if you've ever had radiation treatment to your head or neck.

Material and Method

In this comparative study total 170 sample of serum of patients. These comparative assessments performed at the laboratory of Zen health services sector 57 Gurugram. The instrument we used auto bio company model, auto-lumo1000 which is based on the principle of magnetic particle, glow Chemiluminescence technology [6].

CLIA: An antigen-antibody or immunological complex is formed when an antigen and an antibody are complementary and the paratope of the antibody binds to the antigen's epitope [8]. Estimating the amounts of such immune complexes using tagged antibodies forms the basis of CLIA. Specimen type: Serum

Reagent -for T4: "Calibrator A/B/C/D/E/F"
Microparticle solution, Enzyme conjugate.

T3: "Calibrator A/B/C/D/E/F"
Microparticle solution, Enzyme conjugate, Dissociation solution

TSH: "Calibrator A/B/C/D/E/F"
Microparticle solution, Enzyme conjugate.

Procedure: Well-coated monoclonal antibodies
Serum Testing
Antibody conjugate with HRP labelling

Antigen test: Sandwiched between enzyme-labelled ab and solid phase ab.
Incubate 1 hr at "37°C"
Marked ab removed unbound enzyme
Add reagent Chemiluminescence
A luminometer is used to read relative light units.

Diagnosis of thyroid disorder

Blood tests

Blood testing is the most reliable method of determining whether a thyroid issue exists. The quantity of thyroid hormones in your blood can be measured with thyroid blood tests to determine whether or not your thyroid gland is functioning normally [11]. These tests need the drawing of blood from a vein. Thyroid blood tests are used to determine whether a patient has hypothyroidism or hyperthyroidism.

Blood tests for the thyroid are used to find thyroid disorders connected to hyper- or hypothyroidism. These include goitre, thyroid nodule, thyroid cancer, Graves' disease, Hashimoto's disease, thyroiditis, and any of the aforementioned conditions.

The following specific blood tests will be carried out to examine your thyroid:

Thyroid-stimulating hormone (TSH), which is secreted by the pituitary gland, regulates the ratio of thyroid hormones, such as T4 and T3, in the bloodstream. According to Sun et al. (2018), your doctor would normally conduct this as the initial test to check for an imbalance in your thyroid hormones. Thyroid hormone overproduction (hyperthyroidism) is frequently correlated with a low TSH level, whereas thyroid hormone deficiency (hypothyroidism) is typically correlated with a high TSH level, according to Raab et al. (2006). To further evaluate the situation if TSH is abnormal, it may be essential to detect thyroid hormones directly, such as triiodothyronine (T3) and thyroxine (T4). TSH levels in adults should range from 0.40 to 4.50 mIU/mL.

T4 Thyroxine: This examination is used to diagnose hypothyroidism and hyperthyroidism and to track the progress of thyroid problem treatment [19]. High T4 levels could indicate hyperthyroidism, while low T4 levels are associated with hypothyroidism. Adult T4 levels should be between 5.0 and 11.0 ug/dL.

T3 Triiodothyronine: The hyperthyroidism is identified using this test. Although elevated T3 levels in hyperthyroidism can be detected with this test, low T3 levels can also be shown in this condition. The normal T3 range is 100 to 200 ng/dL.

Thyroid antibodies: These examinations aid in the diagnosis of several autoimmune thyroid diseases. Microsomal antibodies, also known as thyroid peroxidase, thyroglobulin, thyroid receptor, and thyroid-blocking immunoglobulins, are frequently used in thyroid antibody assays [14].

Calcitonin: These tests are used to identify the rare thyroid conditions C-cell hyperplasia and medullary thyroid carcinoma.

Thyroglobulin: This test is employed to diagnose thyroiditis and monitor the efficacy of thyroid cancer therapy.

Ultrasound imaging: Ultrasound uses high-frequency sound waves to see within the body. To see the thyroid, the ultrasound transducer is placed on the lower neck [22]. Your doctor can assess the likelihood that a thyroid nodule is benign (noncancerous) or whether there is a chance that it

could be cancerous based on how your thyroid looks during an ultrasound.

Physical examination: A doctor will physically examine your thyroid during your neck checkup to check for thyroid nodules or other physical abnormalities [13]. In addition, he or she can ask you about your risk factors, like previous radiation exposure and family history of thyroid cancer.

FNAB: The thyroid can be treated for thyroid cysts or cancer via a method known as a fine-needle aspiration biopsy (FNAB) [10]. A thyroid nodule's cancerous likelihood varies depending on age, gender, radiation exposure, and other factors.

Treatment and medication

The following treatments are used to reduce the high levels of thyroid hormones

Anti-thyroid drugs (methimazole and Propylthiouracil)

These medications stop the thyroid from making hormones. **Beta blockers:** Despite the fact that these medications don't change your body's hormone levels, they do assist you control your symptoms.

Radioactive iodine: This therapy causes cell damage to your thyroid, preventing it from producing a lot of thyroid hormones.

Surgery: Your healthcare practitioner might surgically remove your thyroid as the long-term option for thyroidectomy. This will prevent it from producing hormones. For the remainder of your life, you will require thyroid replacement therapy [6].

The main course of treatment for hypothyroidism involves

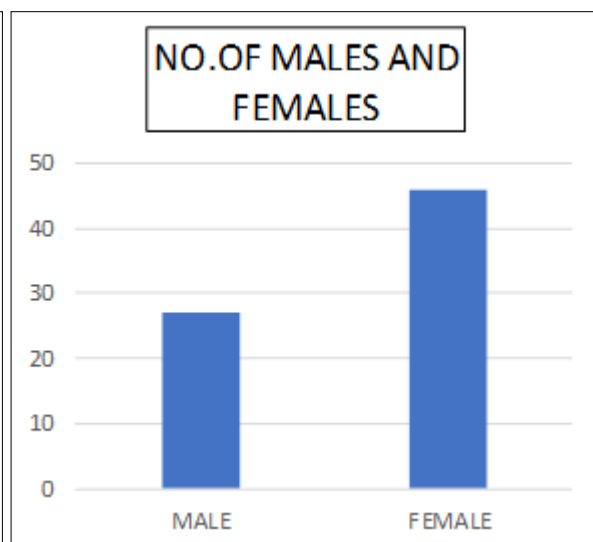
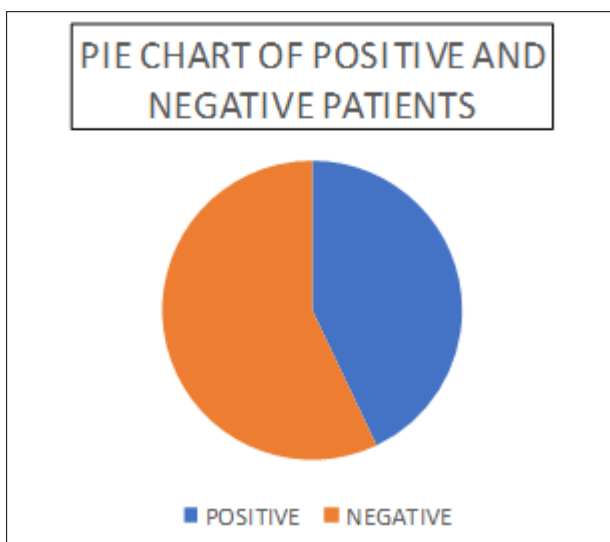
Thyroid replacement medication: This medication is a synthetic method of reintroducing thyroid hormones to your body. One such often prescribed drug is levothyroxine. You can take medication to treat thyroid disease and go about your daily life [9].

Chemotherapy: Chemotherapy is a medication that destroys cancer cells by using chemicals. Chemotherapy is frequently administered as an intravenous infusion. Throughout your body, the chemicals kill rapidly proliferating cells, including cancer cells [5]. Although it is not frequently prescribed, chemotherapy is sometimes suggested for persons with anaplastic thyroid cancer. Radiation therapy can be coupled with chemotherapy [2].

Results

In this study, I have taken 170 patient sample during the time of period of 6 months at Zen health services sector 57 Gurugram. As above mentioned, that we are performing our analysis on the Auto bio autolumoa1000, this analyser based on the principle of CLIA. For analysis the data we use lab mate software in the sample of 170 male patient is 57 and the female is 113. Age group 25 to 35 is 87 sample and the below of the 20 is 47 and the group of the age above the 45 is 36. In this analysis of the thyroid, we found the thyroid is more effect women as compared to men. Due to the increase of thyroid women phase lot of problem in pregnancy. Some have Hashimoto disease, graves, goiter.

Positive	73	High t4	6
Negative	97	High TSH	3
Male	27	Low level of t3	5
Female	46	Low level of TSH	2
Hyperthyroidism	29	Low level of t4	3
Hypothyroidism	13	Pregnant women	4
High t3	8	High t4	6



Discussion

Thyroid problems are still poorly diagnosed and treated in India. Thyroid disorder registries may help estimate the severity of thyroid issues' effects because this knowledge can affect the laws governing how these disorders are treated. All women of reproductive age should have enough

iodine [5]. Most individuals with juvenile autoimmune thyroiditis should have their near relatives screened. The recommendations above would be based on research from Indian and Western research and treatment practices from various organizations [9]. The study advises thyroid screening programs regularly and addresses issues of

restricted availability to prophylactic and treatment facilities. Thyroid management standards must be considered by our assets, even if the backdrop set up is weak, and education initiatives must be concerned with preventing thyroid disorders [12].

According to a professional survey, over a third of the Indian population suffers from thyroid disorders, implying that approximately 32% million Indians suffer from gland abnormalities in some way [2]. Men and women experience weakness, weariness, weight gain, depression, and elevated cholesterol levels due to hypothyroidism (hypothyroidism). Thyroid issues is a disorder wherein the thyroid generates too much of the hormone thyroxin, which causes fast or irregular pulse, perspiration, and agitation or irritation [6]. People residing in the North areas of India had reported the most cases of hypothyroidism compared to most of the country. The thyroid could be effectively treated with earlier detection and medication. Hormone replacement is a simple and effective way to control discomfort and avoid problems [17].

The most prevalent endocrine illness impacting the general population, thyroid dysfunction, considerably raises the morbidity rate. The thyroid in pregnancy and childhood has been the subject of exciting research in India during the last two years [23]. One in ten persons in the research sample had hypothyroidism, making it a common condition. Hypothyroidism was found to be strongly correlated with older age and female gender [15]. Females who are older and overweight appear to be more susceptible. In a sizeable portion of patients, autoimmune mechanisms are the root cause of the disease. Intake of iodine is no longer the only etiological factor for thyroid diseases in metropolitan environments. But after universal salt iodization, we wanted to understand the extent of the iodine deficiency and how it affected the incidence of thyroid dysfunction and autoimmune disease in this poor society [1].

Conclusion

Subclinical hypothyroidism is more common in women. Subclinical hypothyroidism is more common beyond the age of 50. According to the study, hypothyroidism is more common than hyperthyroidism among the people who made up our study sample. The most extensive prevalence of thyroid problems was in people aged 30-49. The mean TSH level rose with age in the hypothyroid, euthyroid, and hyperthyroid groups.

The age ranges from 10 to 19 years had the lowest TSH concentration, while the age range from 60 to 69 years had the highest TSH concentration. Males outnumbered females by a margin of 24.7% to 18.2%. Since more women who complained of irregular menstruation, infertility or PCOS were submitted to a thyroid test as part of the usual protocol, we feel this bias was incorporated into the study. TFT was exclusively administered to males who had a thyroid disease suspicion. The finding that a sizable percentage of patients have inadvertently thyroid dysfunctional laboratory findings underscores the importance of screening thyroid function after age 30 for early detection and treatment to decrease thyroid dysfunction's negative effects.

In India, thyroid issues are still not adequately identified and treated. Thyroid disorder registries may help estimate the severity of thyroid problems' effects because this knowledge can affect the laws governing how these conditions are treated. All women within reproductive age range should

have enough iodine. Most individuals with juvenile autoimmune thyroiditis should have their near relatives screened. The recommendations above would be based on research from Indian and Western research, as well as treatment practice from a variety of organisations. The study advises thyroid screening programs on a regular basis, as well as addressing issues of restricted availability to prophylactic and treatment facilities. Thyroid management standards must be considered by our assets, even if the backdrop set up is weak, and education initiatives must be concerned with preventing thyroid disorders.

According to the professional survey, and over a third of an Indian population suffering from thyroid disorders, implying that approximately 32% million Indians suffering from gland abnormalities in some way. Men and women both experience weakness, weariness, weight gain, depression, and elevated cholesterol levels as a result of a hypothyroidism (hypothyroidism). Thyroid issue is a disorder wherein the thyroid generates so much thyroxin hormone, which causes fast or irregular pulse, perspiration, and agitation or irritation. People residing in the North areas of India had reported the most cases of hypothyroidism when comparison to the majority of the country. The thyroid could be effectively treated with earlier detection and medication. Hormone replacement is a simple and effective way to control discomfort and avoid problems.

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The author(s) reported no potential conflicts of interest.

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